visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin, Coláiste na Tríonóide, Baile Átha Cliath, The University of Dublin

TU WIEN

Universitat d'Alacant, Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 1

Caterina Maidhof

Research project

Perceptions of personal privacy in different users regarding health monitoring technologies

RWTH Aachen University (RWTH), Germany

About the project

This project seeks to identify differently perceived dimensions and degrees of personal privacy by potential users of a broad range of health monitoring technologies (e.g., video-based, audio-based, sensor-based). Perceptions of privacy are analysed technology-specifically, while as well considering user group-specific needs and requirements in diverse contexts. Potential users of such technology can be of the entire lifespan; however, this project mainly targets older and frail persons, who have experiences with chronic illnesses and care. The here resulting graduations of privacy can be elaborated and then appropriately concerned by respective stakeholders.

About the ESR

Caterina received a MSc in Applied Cognitive Psychology from Utrecht University in 2020. She wrote her Thesis in the context of Human-Computer Interaction investigating the effectiveness of personal speech alerts for automotive settings. Furthermore, she holds a BSc in Communication from USI University Switzerland (2018) and has gained working experience in the fields of advertising and business communication.

Contact information

Caterina Maidhof

Chair of Communication Science

Institute of Language and Communication Studies
Human-Computer Interaction Center
RWTH Aachen University
Campus Boulevard 57
52074 Aachen, Germany

Email address: maidhof@comm.rwth-aachen.de

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 2

Sophia Otten

Research project

(Dis)Trust in medical technologies and medical support considering (severe) health decisions

RWTH Aachen University (RWTH), Germany

About the project

Trust as a major component of the acceptance of medical technologies is essential. Especially in severe health- and life-end-decisions, socio-ethical perspectives on lifelogging and medical technology are of paramount impact. Thereby, trust in technologies and decisions of medical personnel are of utmost importance for people who need assistance and care. Yet, trust concepts prevailing are concentrating on different usage contexts and lack of understanding which factors need to be considered in severe illness and under vital conditions. This thesis examines the extent to which trust in technology and medical support impacts technology acceptance and decisions in (severe) health situations. The dissertation will explore insights into trust building and the trust requirements in sensible user groups and usage contexts.

About the ESR

Sophia received a MScRes in Differential Psychology from the University of Edinburgh in 2021. She completed her BSc in Cognitive Neuropsychology, minoring in medical psychology, from Tilburg University 2020. In her Master's thesis, she investigated stress on decision making with the mediating role of emotional intelligence in athletes.

Contact information

Sophia Otten

Chair of Communication Science

Institute of Language and Communication Studies
Human-Computer Interaction Center
RWTH Aachen University
Campus Boulevard 57
52074 Aachen, Germany

Email address: otten@comm.rwth-aachen.de

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 3

Alexander Hick

Research project

Acceptance of artificial intelligence in health-related contexts

RWTH Aachen University (RWTH), Germany

About the project

The project focusses on the support of people who suffer from chronic diseases and their medical staff by means of intelligent technology. It will investigate the required as well as desired functions of these solutions depending on the respective context and user group. In addition, it will examine the perceived benefits and barriers, including usage conditions for these intelligent technologies in a broad range of healthcare settings. The goal is to develop an acceptance cartography of intelligent technology to provide the healthcare industry with knowledge about the benefits, in addition to a critical analysis about the potential risks regarding privacy, dignity, and control.

About the ESR

Alexander received his MSc in Philosophy from the University of Edinburgh in 2021. In his thesis he investigated perception regarding conscious and unconscious features of phenomenal consciousness. He holds a BSc in cognitive neuropsychology from Tilburg University.

Contact information

Alexander Hick

Chair of Communication Science

Institute of Language and Communication Studies
Human-Computer Interaction Center
RWTH Aachen University
Campus Boulevard 57
52074 Aachen, Germany

Email address: hick@comm.rwth-aachen.de

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin, Coláiste na Tríonóide, Baile Átha Cliath, The University of Dublin

TU WIEN

Universitat d'Alacant, Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 4

Zhicheng He

Research project

Video-based AAL technologies and colliding legal frameworks

Stockholm University, Sweden

About the project

While the emergence of AAL technologies within the context of healthcare present incredible opportunities to improve the life quality of the frail and sick, these technologies pose significant legal issues. These technologies require coherent legal regulation in order to ensure, among other things, the safety of the device and the privacy of the individual using it. Taking a global perspective, this project will explore the current legal framework governing video-based AAL technologies and involve an in-depth interpretation and systematization of the positive law related to this emerging field. While the bulk of the work will involve a deep dependence on traditional legal sources, reliance on materials gathered in the domain of computer science and a translation of these materials into a legal context will be necessary.

About the ESR

Zhicheng is interested in exploring the interaction between law and information technology. He completed his Master of Laws in International Business Law (LL.M.) at Ghent University (Belgium) where he dedicated his thesis to personal data protection. He holds another Master of Laws degree and a Bachelor of Laws degree, both from Southwest University of Political Science and Law (China). Before his position in visuAAL, Zhicheng worked as an in-house legal counsel and gained practical experience in the ICT sector.

Contact information

Zhicheng He

The Swedish Law and Informatics Research Institute (IRI)

Department of Law
Stockholm University
Universitetsvägen 10C
106 91 Stockholm, Sweden

Email address: zhicheng.he@juridicum.su.se

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin, Coláiste na Tríonóide, Baile Átha Cliath, The University of Dublin

TU WIEN

Universitat d'Alacant, Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 5

Maksymilian Kuźmicz

Research project

Video-based AAL technologies and balancing of interests

Stockholm University, Sweden

About the project

An aspect that is necessary to take into account, when introducing new technologies into society, is that there are bound to be multiple interests at stake, which potentially come into conflict with each other, particularly from a legal perspective. For example, under the General Data Protection Regulation (GDPR), an individual is able to gain access to the logic behind automated decisions that affect him or her, yet only to the extent that it does not interfere with any intellectual property rights to that technology (see Article 22 and Recital 63 GDPR). Another illustration concerns AAL technologies that have the potential to erode an individual's privacy rights while at the same time bring great benefits to society in terms of the reduction of treatment costs. In short, this thesis will examine how the law should balance interests within the context of Video-based AAL technologies.

About the ESR

Maksymilian obtained a BA in Law and Philosophy (Summa cum laude) from the College of Interdisciplinary Individual Studies in Humanities and Social Sciences at the KU Lublin. During both his BA and MA, he spent in total 3 semesters at KU Leuven as an exchange student. He completed his education with an MA in Law from KU Lublin (Summa cum laude). Since September 2020 Maksymilian has been working at the Institute for European Law at KU Leuven.

Contact information

Maksymilian Kuźmicz

The Swedish Law and Informatics Research Institute (IRI)

Department of Law
Stockholm University
Universitetsvägen 10C
106 91 Stockholm, Sweden

Email address: maksymilian.kuzmicz@juridicum.su.se

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 6

Giorgi Parulava

Research project

Digital twins as a way to help insure legal compliance of video-based AAL technologies

Stockholm University, Sweden

About the project

The General Data Protection Regulation (GDPR) offers strong protection for the individuals' integrity. Video-based AAL technologies generate tremendous healthcare and wellbeing solutions but at the same time, present serious privacy concerns that threaten the long-term sustainability of these products. One way to speed up the implementation of important research within the context of AAL technologies is to simulate data in "digital twins" thus helping to solve key future issues without compromising individual integrity. Investigating opportunities to carry out important research without having to use personal data, but instead, data on "computer-generated agents" or other simulations is the focus of this project.

About the ESR

Giorgi graduated with a Master of Laws in European Business Law (LL.M.) degree from Lund University. He holds a Bachelor of Laws (with Honours) degree from Ivane Javakhishvili Tbilisi State University (TSU) and studied international law at the University of Groningen for two semesters. Before joining visuAAL, Giorgi gained professional experience at business companies, research organizations, and governmental institutions, notably the National Competition Agency of Georgia. He is interested in legal, economic, and social issues associated with technological advancements.

Contact information

Giorgi Parulava

The Swedish Law and Informatics Research Institute (IRI)

Department of Law
Stockholm University
Universitetsvägen 10C
106 91 Stockholm, Sweden

Email address: giorgi.parulava@juridicum.su.se

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 7

Mohamed Osman

Research project

Use of camera systems to support home based multiple chronic disease (multimorbidity) self-management

Stockholm University, Sweden

About the project

Self-management is a critical component of chronic disease management and can include activities, such undertaking daily care activities, managing medication, and proactively linking in with one's care network (informal carers, formal carers and healthcare professionals). The rise of digital health technologies (mobile applications/phones, sensor-based devices, cameras) to assist health and well-being management of chronic diseases offers potential support for people to better manage their diseases in collaboration with their care network. Camera systems (both home-based and wearable) may be used to provide rich contextual data and insight into everyday activities to better understand the complexity of multiple disease (multimorbidity) management. This information can then be a) used to better guide self-management activities and b) shared with an individual's care network to help develop truly collaborative goal-based interventions to support self-management. Use of cameras to better understand and augment self-management by people with multimorbidity has yet to be fully explored. This PhD will aim to understand and define the use of camera-based technologies for older adults living at home with multiple chronic health conditions (e.g. multimorbidity). Particular emphasis will be placed on understanding the factors that impact the relationship between individuals with multimorbidity and their care network.

About the ESR

Mohamed has received his master's degree of Public Health from The University of Gothenburg, Sweden in 2019. His MSc thesis at the Centre for Ageing and Health (AgeCap) investigated the role of demographic and socioeconomic status in changing the sedentary behaviour (Physical Activity levels) among the older adults using the mHealth as a data collection method. His bachelor's degree of Physical Therapy has been completed from Cairo University, Egypt in 2011. He is expert in designing individually tailored self-management medical rehabilitation programs for multiple chronic diseases management (mainly Neurologic and Musculoskeletal disorders) at different healthcare settings to enhance the active and assisted living (AAL). He is a Swedish Institute scholar.

Contact information

Mohamed Osman

Trinity Centre for Practice & Healthcare Innovation (TCPHI)

School of Nursing and Midwifery
Trinity College Dublin

Email address: osmanahm@tcd.ie

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 8

Natalie Tham An Qi

Research project

Application of behavioural change theory to the design, development, and implementation of camera systems to support home-based multiple chronic disease (multimorbidity) self-management

Trinity College Dublin, Ireland

About the project

Technological advances in camera-based monitoring systems have made it increasingly possible to support the care of older adults living with chronic conditions from their own homes. In particular, video- and camera-based medical monitoring systems (VCMMS) may facilitate the home-based self-management of multiple diseases (i.e., multimorbidity). Though technically feasible, the privacy and ethical implications of VCMMS are poorly understood, which may hinder the eventual uptake of such systems among the techno-pessimistic elderly. To this end, behaviour change theory and the use of Behaviour Change Wheel (BCW) provide a promising framework against which the barriers to and facilitators of VCMMS adoption may be understood. Such an understanding will inform the development of acceptable and effective VCMMS for home-based multimorbidity care.

Envisaged outcomes will seek to advance the understanding of which behavioural targets, functions, and techniques (as per the BCW) should be optimally targeted in the future design, development, and implementation of VCMMS within the home environment to support multimorbidity self-management. Additionally, this research will attempt to delineate the most appropriate behaviour change strategies to address end-users' privacy and ethical concerns for VCMMS use within the home.

About the ESR

Natalie holds a BSc in Psychology (2019) and an MSc in Applied Psychology and Economic Behaviour (2020), both from the University of Bath, UK. Her undergraduate and Master's thesis examined behaviour change in the contexts of plant-based consumption and wilful ignorance, where comprehensive behavioural analyses were implemented to gain a deeper understanding of how best to facilitate the desired behaviour change.

Contact information

Natalie Tham An Qi

Trinity College Dublin
Trinity Centre for Practice & Healthcare Innovation (TCPHI)
School of Nursing and Midwifery
24 D'Olier Street
Dublin, Ireland
Email address: ntham@tcd.ie

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 9

Hassan Zaal

Research project

Self-management/education/training for individuals with multiple chronic health conditions using visual based data on a mobile robot

Trinity College Dublin, Ireland

About the project

The aim of this PhD is to explore machine learning or artificial intelligence (AI) approaches interaction with visually guided Personal Assistant Robots (PARs) as a part of Active and Assisted Living (AAL) environment. Research will involve defining user and behaviour models to facilitate appropriate AI approaches to interaction that support self-management, educational and training that are delivered visually and via audio on a PAR. The user will be able to interact with the PAR through spoken language. The PARs will use Vision-and-Language Navigation (VLN) approaches to parse the user's instructions and execute them in the AAL environment. The PhD will also address data protection, ethical and privacy concerns in relation to the use of AI and visual data in an AAL context.

About the ESR

Hassan holds a Postgraduate diploma in Vision and Robotics (VIBOT) from Heriot-Watt University in the UK. He spent a semester at Bourgogne University in France and a semester at Girona University in Spain, as an Erasmus student. He received a BSc in Computer and Automation Engineering specializing in Control and Automation Engineering from Damascus University in Syria.

Contact information

Hassan Zaal

ADAPT Centre
O'Reilly Institute
Trinity College,
Dublin 2, Ireland

Email address: zaalh@tcd.ie

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 10

Wiktor Mucha

Research project

Behaviour modelling and life logging

TU Wien, Austria

About the project

Lifelogging is a recent ICT technology that uses wearable sensors (e.g. cameras, trackers, wearable sensors) to capture, store, process and retrieve the different situations, states and context of an individual in daily life. Using a wearable camera that automatically takes 3 images per minute provides about 2000 pictures at the end of each day that can illustrate in detail which activities the person wearing the camera has done - e.g. how (s)he eats, what places (s)he visited, with whom (s)he interacted, what events (s)he attended, etc. In this way, the topic of this thesis is lifelogging in order to create personalized tools and services to monitor, store and process the behavioural skills, nutrition patterns, social environment, context and proper physical activities during long periods in an objective way.

About the ESR

Wiktor received BSc title in 2018 in Automatic Control and Robotics and MSc title in Robotics in the end of 2019, both at the AGH University of Science and Technology in Krakow, Poland. During his masters he spent one year at the University of Aveiro in Portugal as an exchange student.

Before position in visuAAL he gained experience in software engineering, working for automotive industry on autonomous embedded solutions for car driving.

Contact information

Wiktor Mucha

Vienna University of Technology

Computer Vision Lab
Favoritenstr. 9/193-1
A-1040 Vienna, Austria

Email address: wmucha@cvl.tuwien.ac.at

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 11

Sophie Noiret

Research project

Algorithmic governance for active assisted living

TU Wien, Austria

About the project

Algorithmic decision making became enmeshed into daily life. In active assisted living data is analysed and interpreted with the intention to support people in various ways: recognizing behaviour, events, emotions, needs; creating ambient intelligence; predicting activities and proposing treatment strategies. Machine learning as prerequisite of intelligence is applied. Taking into account recent success, it can be claimed, that not only a set of specific algorithms but also a lot of example data is needed to run the learning methods. And usually those building the algorithms are not trained in law or the social sciences, while experts in discrimination law do not know how to audit modern machine learning algorithms. Further complicating matters is that even experts in computer science and mathematics often struggle with interpreting the output of many modern machine learning algorithms. Unsurprisingly assessing and guaranteeing fairness and transparency in machine learning is a wide open research and that is the topic of the PhD proposal.

About the ESR

Sophie received her Master's Degree in Engineering from the Ecole Centrale de Nantes (France) in 2018, with a specialty in Robotics and Embedded Systems. She has since worked in the aeronautics industry, developing software for the Rafale plane.

Contact information

Sophie Noiret

Vienna University of Technology

Computer Vision Lab
Favoritenstr. 9/193-1
A-1040 Vienna, Austria

Email address: snoiret@cvl.tuwien.ac.at

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 12

Irene Ballester

Research project

AI for dementia care

TU Wien, Austria

About the project

Although the progress and severity of dementia varies depending on the underlying cause (e.g. Alzheimer´s disease) there are common symptoms between the manifestations. These symptoms include personality changes, which manifests itself in becoming subdued or withdrawn. By using machine learning in long-term emotional analysis, it should be possible to recognize patterns and thus determine personality changes. In order to assign the person´s mood correctly, it is necessary that the algorithms treat the emotions context aware. This means that the current situation and environment of the person is detected (e.g. by sensors or smartphone) which allows to determine whether certain emotions are only felt in company or alone.

Some outcomes will be the development of new therapeutic intervention strategy, behaviour analysis based on 3D and 2D tracking data in order to detect changes in the health status, context aware recommendation for (music and dance) movements based on emotions and movement analysis, and empowerment of older people to increase the therapy effectiveness.

About the ESR

Irene holds a BSc degree in Industrial Technology Engineering (2017) and an MSc degree in Industrial Engineering (2020), both from the University of Zaragoza, Spain. During the academic year 2019-2020, she was a Working Master Student at DLR in Munich where she wrote her Master's thesis on Dynamic SLAM systems.

Contact information

Irene Ballester Campos

Vienna University of Technology

Computer Vision Lab
Favoritenstr. 9/193-1
A-1040 Vienna, Austria

Email address: iballester@cvl.tuwien.ac.at

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 13

Siddharth Ravi

Research project

Privacy preservation in video-based AAL applications

Universidad de Alicante, Spain

About the project

Visual data exposes a lot of information about individuals appearing on images and videos. Individuals may want to conceal all of this data, but in this case, the remaining information would be useless for the AAL services that build upon it. Therefore, there is a need to establish a trade-off between privacy and intelligibility of the images. This project will advance in a privacy-by-context approach, in which different visualisations are produced depending on the context in which images or videos are captured: Identity, appearance, location, ongoing activity of the subject being monitored; event triggered; identity and access rights of the observer; closeness between observer and monitored subject... While these privacy-by-context approach has been successfully employed using RGB-D cameras, it has been difficult to address privacy preservation using regular RGB cameras either located in the environment (preferably on the ceiling) or worn by the user. Therefore, this project will investigate visualisations methods to conceal visual privacy in applications and services for older and frail people that employ RGB cameras.

About the ESR

Siddharth holds a master's degree in Systems and Control (2017), specializing in cognitive robotics from the Delft University of Technology (TU Delft) in The Netherlands. He has since done machine learning research in both industrial and academic settings. His latest stint was at the Norwegian company Q-Free, where he worked on creating novel deep learning-based object detection and segmentation pipelines to solve hard problems related to traffic and transportation.

Contact information

Siddharth Ravi

University of Alicante
Department of Computing Technology

Ctra. San Vicente del Raspeig, S/N
03690 San Vicente del Raspeig, Spain

Email address: siddharth.ravi@ua.es

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 14

Kooshan Hashemifard

Research project

Context recognition for the application of visual privacy

Universidad de Alicante, Spain

About the project

Most works conceal people's visual privacy by using blurring or pixelating effects to modify an image. In a privacy-by-context approach, a level-based visualisation scheme to protect privacy is proposed. Each level establishes the way in which the video images are modified and displayed and, therefore, the provided protection degree. In this scheme, the appropriate level is dynamically selected according to the context, therefore modifying a non-protected image before it is displayed. The context has to provide enough information in order to empower people to adapt privacy to their preferences, in such a way that they can decide by whom, how and when they can be watched. The context is modelled by different variables: (i) the observer; (ii) the identity of the person (to retrieve the privacy profile); (iii) the closeness between the person and observer (e.g., relative, doctor or acquaintance); (iv) appearance (dressed?); (v) location (e.g., kitchen); and (vi) ongoing activity or detected event (e.g., cooking, watching TV, fall). Therefore, an accurate recognition of the context is paramount to provide the appropriate privacy level. This project will investigate techniques to recognise accurately these variables and it will validate them under different use case scenarios.

About the ESR

Kooshan obtained his bachelor degree in Electrical Engineering (2015) from KNTU and a master's degree focused on Signal Processing (2018) from Iran Broadcasting University. During his studies, he mainly explored the field of machine learning and after graduation, he worked as a Computer Vision engineer in different startups in Iran and developed large-scale machine learning services.

Contact information

Kooshan Hashemifard

University of Alicante
Department of Computing Technology

Ctra. San Vicente del Raspeig, S/N
03690 San Vicente del Raspeig, Spain

Email address: k.hashemifard@ua.es

visuAAL

visuAAL

Innovative Training Network

Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living

visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living is a four-year (2020-2024) Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN), funded under the Horizon 2020 programme

Europe is facing crucial health and social care challenges due to the demographic shift towards an ageing population and related economic impact from increased provision of care. Innovation in Active and Assisted Living (AAL) solutions has the potential to address these healthcare and social demands while profiting from the economic opportunities driven by the Silver Economy. Advances in computer vision have given video cameras the ability of 'seeing', evolving their functionality to become 'smart cameras'. However, the monitoring using cameras can be seen as intrusive and violating rights to privacy, because of the concern that raw video images could be observed by unauthorised viewers or stored for inappropriate use. Acceptance of such technologies is also low because they create a sense of Orwellian "Big Brother" surveillance.

The aim of visuAAL is to bridge the knowledge gap between users' requirements and the appropriate and secure use of video-based AAL technologies to deliver effective and supportive care to older adults managing their health and wellbeing. visuAAL will seek to increase awareness and understanding of the context-specific ethical, legal, privacy and societal issues necessary to implement visual system across hospital, home and community settings, in a manner that protects and reassures users; outputs will stimulate the development of a new research perspective for constructively addressing privacy-aware video-based working solutions for assisted living.

This aim will be achieved by providing a transdisciplinary and cross-sectoral combination of training, non-academic placements, courses and workshops on scientific and complementary skills. This holistic training to 15 high achieving early stage researchers (ESRs) will be facilitated by the consortium, a community of researchers and industrial partners from different fields (computer science, engineering, healthcare, law, business, sociology) and other stakeholders (users, policy makers, public services).

As result of this, visuAAL will seek to offset the "Big Brother" perception towards the use of visual systems by increasing the understanding of user acceptance towards new visual based technologies and services. Scientific and technical innovations emanating from visuAAL will seek to have significant impacts on the health and wellbeing of older adults, their families and other stakeholders by allowing older adults to remain independently at home supported within their communities. The outcome of this will be to improve market reach for future visual support health systems.

BENEFICIARIES

RWTH AACHEN UNIVERSITY

Stockholm University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TU WIEN

Universitat d'Alacant
Universidad de Alicante

CONTACT

Dr Francisco Florez-Revuelta
visuAAL Project Coordinator
Dept. of Computing Technology
University of Alicante
Po. Box 99 - 03080 - Alicante (Spain)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 861091.

@visuAAL_ITN info@visuaal-itn.eu visuaal-itn.eu

ESR 15

Tamar Mujirishvili

Research project

Perceptions of personal safety and privacy in frail elderly, disabled people and their caregivers in the context of video-based lifelogging technologies

Universidad de Alicante, Spain

About the project

The aim of this project is to analyse the acceptance of AAL (lifelogging) technologies, essentially the monitoring with video cameras located in public and private spaces, by their potential users. Including as a potential user, both the frail elderly patients and people with disabilities and with needs of aid, and their caregivers, formal or informal. Different types of cameras, locations, and type of information will be considered as well as benefits (for example, medical safety) and related barriers (for example, the threat to their privacy).

About the ESR

Tamar received her Master's Degree in Neuroscience from the University of Bordeaux in 2020. She executed her master thesis research at the University of Cambridge investigating how prior expectations influence perception. She obtained her BA Degree in Psychology from Tbilisi State University in 2015. She has spent the 2013-2014 academic year at the University of Groningen (The Netherlands) as an exchange student at the faculty of Behavioral and Social Sciences, specializing in Psychology.

Contact information

Tamar Mujirishvili

University of Alicante
Department of Nursing

Ctra. San Vicente del Raspeig, S/N
03690 San Vicente del Raspeig, Spain

Email address: tamar@ua.es

visuAAL