



Siddharth Ravi

Visual privacy preservation for video-based Active and Assisted Living (AAL) applications

Education



Ph.D. in Computer Science, 2021 – 2024 (expected)
- [University of Alicante](#) (Spain)
Topic: Visual Privacy preservation for omnidirectional RGB videos in AAL

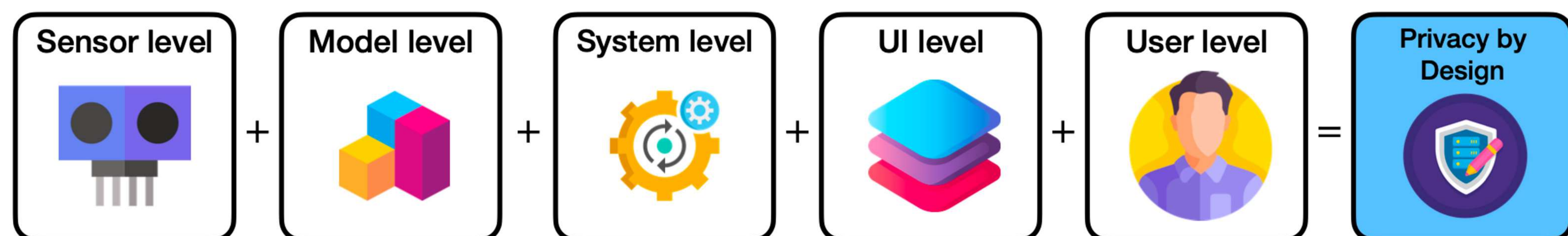


M.Sc. in Systems and Control Engineering (2017)
- [Technische Universiteit Delft](#) (The Netherlands)
Thesis: Reinforcement learning across timescales.

PhD research objectives

Can we create an end-to-end private by design pipeline for contextual visual privacy preservation in AAL using omnidirectional RGB cameras, and which adheres to EU legal regulations?
RQ1 - Can we provide [contextual visual privacy](#) for individuals appearing in [RGB images](#)?
- Created an extensive research review aimed at understanding the state of the art in privacy preservation for AAL [2]
RQ2 - Can we provide privacy to individuals appearing in [zenithal-view omnidirectional](#) camera images?
- Created ODIN, [the first massive multimodal omnidirectional dataset aimed at human behaviour understanding](#) tasks like pose estimation and activity recognition. [1]
RQ3 - Can a private by design pipeline be created for omnidirectional images that adheres to [legal regulations](#)?
- Studied the [legal aspects](#) of creating a privacy preserving pipeline for AAL with Stockholm university.

Design elements for visual Privacy by design



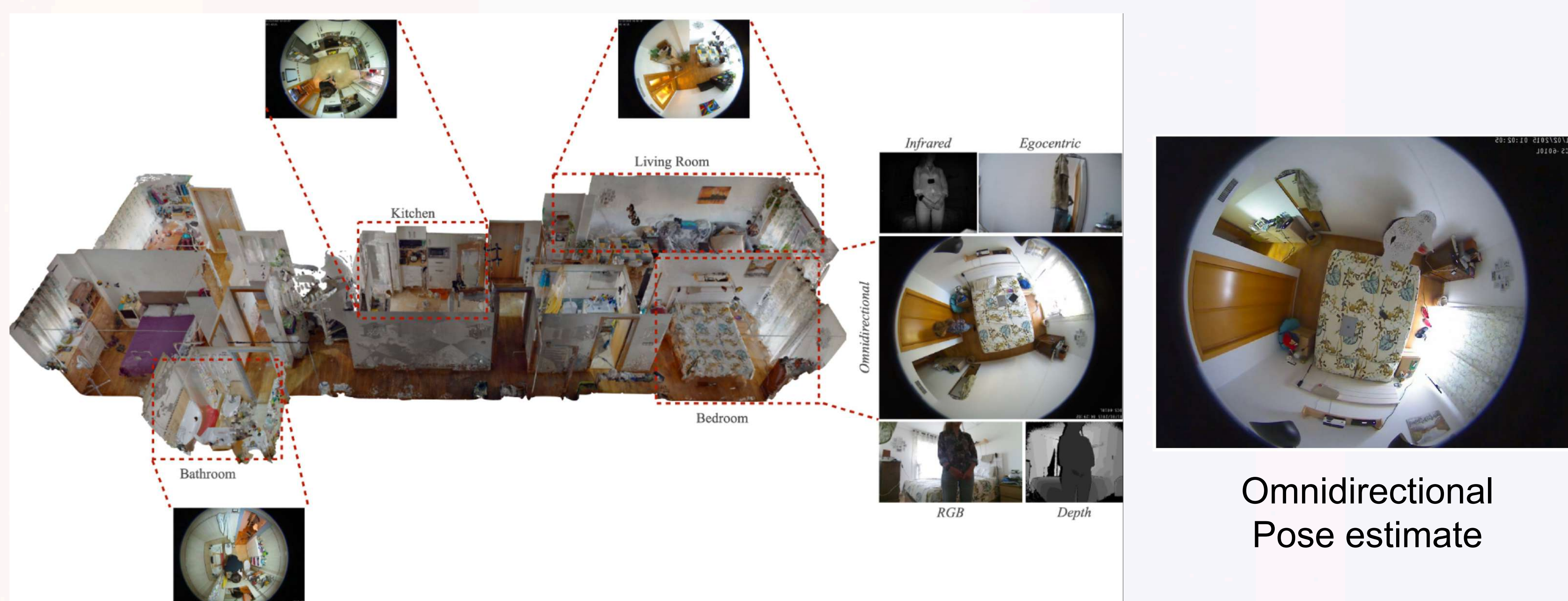
Select Work Experience



Research Engineer, machine learning at [Q-Free.ASA](#), The Netherlands (2019 - 2021)

- Led the development and deployment of [computationally efficient embedded semantic segmenters](#) and [object detectors](#) for vehicle detection and license plate character recognition. (Python / Tensorflow / Scikit-Learn / Google cloud compute)
- The model built was shipped to around [15 countries](#) worldwide.

ODIN – A massive multimodal dataset for human behaviour understanding



Omnidirectional Pose estimate



Researcher, Tilburg University / KPN Amsterdam (2018-2019)

- Developed a method to [distill soft decision trees](#) to interpret [deep reinforcement learning policies](#) using evolutionary algorithms. (Python/Tensorflow, MATLAB).
- Created [interpretable concept mappings](#) from neural latent spaces to knowledge bases comprised of combinations of input features. (Pytorch)



Select Publications

- [1] Ravi, S., Climent-Perez, P., Morales, T., Huesca-Spaurani, C., Hashemifard, K., & Florez-Revuelta, F. (2023). ODIN: An OmniDirectional Indoor Dataset Capturing Activities of Daily Living From Multiple Synchronized Modalities. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2023, (pp. 6487-6496)
- [2] Ravi, S., Climent-Perez, P., & Florez-Revuelta, F. (2021). A review on visual privacy preservation techniques for active and assisted living. Multimedia Tools and Applications 2023.