

SEMINAR ANNOUNCEMENT

Tuesday June 5th, 2024

at 11:00 am

Room "Sala Seminari" - Abacus Building (U14)

Synchronization Problems in Computer Vision

Speaker

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Abstract

The "synchronization" problem has attracted a lot of attention in Computer Vision, thanks to its application in a variety of tasks. The term originates from "time synchronization", where the task is to synchronize clocks in a network by measuring offsets between pairs of clocks. In general, the goal is to estimate some unknown values (associated with nodes in a graph) starting from relative measures (associated with edges in the graph), while enforcing global consistency. Typical examples include the case of rotations (which are related to camera pose estimation in structure from motions), the case of rigid transformations (which find application in registration of 3D point clouds) and the case of permutations (which appear in the context of multi-view matching). In all these cases the space of unknowns admits a matrix representation and the solution can be found via eigenvalue decomposition.

Short Bio

Federica Arrigoni is a tenure-track assistant professor (RTD-B) with the Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) of the Politecnico di Milano. She received the MS degree in Mathematics from the University of Milan in 2013, and the PhD degree in Industrial and Information Engineering from the University of Udine in 2018. From 2018 to 2020 she was a junior researcher with the Czech Technical University in Prague. From 2020 to 2022 she worked as an assistant professor (RTD-A) with the University of Trento. She regularly publishes and serves as reviewer at top computer vision conferences (CVPR, ECCV and ICCV), she was acknowledged as an outstanding reviewer at CVPR 2021, and she hold tutorials/workshops at CVPR 2020, ICCV 2021 and CVPR 2022. She is the main author of the paper entitled "Viewing Graph Solvability via Cycle Consistency" that won the Best Paper Honorable Mention at ICCV 2021 (corresponding to top-5 papers out of 1612 accepted papers). In addition, her paper entitled "Viewing graph solvability in practice" was shortlisted among best paper candidates at ICCV 2023 (corresponding to top-17 papers out of 2161 accepted papers). Her research focuses on geometric problems in 3D Computer Vision.