



TensorDec Laboratory
algebra, geometry and applications of
tensor decompositions



UNIVERSITÀ
DI TRENTO
Dipartimento di
Matematica

9 - 13 October 2023 | Polo Ferrari - Povo 1

Masterclass

Introduction to Algebraic Vision and Multifocal Tensors

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Algebraic Vision is the amalgamation of Algebraic Geometry and Computer Vision. The reconstruction of 3D scenes from 2D images is a classical task in computer vision. We explore the inherent geometric structures of this task and the algebraic methods that are employed in state-of-the-art solvers. At the heart of this are finite rational maps, multifocal tensors, and Euclidean distance minimization over multiview varieties. The lectures will be accompanied by examples and computational exercises with the support of algebra softwares.

SCHEDULE

Monday 9	11:30 - 13:30	Aula A220
Tuesday 10	13:30 - 15:30	Aula A110
Wednesday 11	12:30 - 14:30	Aula A219
Thursday 12	13:30 - 15:30	Aula A108
Friday 13	09:30 - 11:30	Aula A218

The lectures will also be available in streaming via ZOOM.
The link will be shared to the registered participants.

Background:

Painting - *Perspective (Alberti)* by Johnson, Crockett

Credit: Ruth Krauss in memory of Crockett Johnson

National Museum of American History (<https://americanhistory.si.edu/>)

Smithsonian Institution