Ido Cohen

Research Experiences and Interests

My PhD research was focused on PDE and dynamical systems analysis in various domains, from signal and image processing through applied physics to Koopman operator theory and neural networks.

EDUCATION

2018–present	**PhD Student in Electrical Engineering**. Technion–Israel Institue Of Technology, Israel
2010–2014	**M.Sc. in Electrical Engineering**. Technion–Israel Institute of Technology, Israel Dissertation: *Control and Guidance of Fighter Aircraft in Autonomic Flight* Committee: Nahum Shimkin
2001–2008	**B.Sc. in Electrical Engineering**. Technion–Israel Institute of Technology, Israel

PUBLICATIONS

Archive

- **I. Cohen** and G. Gilboa. Latent Modes of Nonlinear Flows – a Koopman Theory Analysis. 2021 arXiv:2107.07456v3

Journals

- **I. Cohen**, O. Azencot, P. Lifshits, and G. Gilboa. Modes of homogeneous gradient flows. 2021 SIAM Journal on Imaging Sciences, 14, 3, 913-945
- **I. Cohen** and G. Gilboa. Introducing the p-Laplacian spectra. Signal Processing 167 (2020): 107281.
- **I. Cohen** and G. Gilboa. Energy dissipating flows for solving nonlinear eigenpair problems. Journal of Computational Physics 375 (2018): 1138-1158.

Conferences

- **I. Cohen**, T. Berkov, and G. Gilboa. Total-Variation Mode Decomposition. 2021 Scale Space and Variational Methods in Computer Vision, 52, 64
- **I. Cohen**, , A. Falik, and G. Gilboa. Stable explicit p-laplacian flows based on nonlinear eigenvalue analysis. In International Conference on Scale Space and Variational Methods in Computer Vision (pp. 315-327). Springer, Cham. (2019, June)

INVITED TALKS

Jan, 2022	Koopman Analysis of Gradient Descent Optimization The First International Israel Data Science Initiative Conference - IDSI 2022
July, 2020	Mode Decomposition for Homogeneous Symmetric Operators SIAM Conference on Imaging Science (IS20) - Nonlinear Spectral Analysis with Applications in Imaging and Data Science
Nov 20, 2019	Fluid dynamics meets image processing through nonlinear mode decomposition Applied Math Colloquium UCLA, LA, CA
Jul 18, 2019	Spectral representations for p-homogeneous regularization ICIAM-International Congress on Industrial and Applied Mathematics, Valencia, Spain

SERVICE

Reviewer	SSVM (2019),

TEACHING

Head TA	Technion, 049064–Variational Methods in Image Processing (Winter 2020), (Winter 2021)
Head TA	Technion, 44192–Control Systems

Industry Experience

2016-2018	ARTSys 360 - I was in charge of software architecture of a RADAR system. This system includes the signal processing tasks, communications, interfaces and GUI.
2012-2015	Mobileye - I was an algorithm developer. I focused on machine learning, tracking algorithms, and computer vision. Among other missions, I dealt with two to three dimensions algorithms (homography) for object detection.
2005-2007	Rafael – I worked for the research and development department. We implemented the pre-processor of a RADAR. This part includes from down-sampling to the Range-Doppler map.
2004-2005	Intel – I was a product engineer. I developed tests for CPU before mass production and marketing.