

## CURRICULUM VITAE – ALEXANDER BRONSTEIN

### PERSONAL INFORMATION

Name: Bronstein, Alexander  
URL for web site: [bron.cs.technion.ac.il](http://bron.cs.technion.ac.il)  
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### RESEARCH INTERESTS

Machine vision and learning ♦ acquisition, processing, representation and analysis of 3D geometry ♦ analysis, representation, indexing and retrieval of Internet-scale visual information ♦ data modeling and nonlinear dimensionality reduction ♦ computational imaging and image processing ♦ efficient algorithms and hardware for deep learning ♦ structural biology ♦ computational chemistry

### EDUCATION

2007 Ph.D., Computer Science, Technion – Israel Institute of Technology  
2005 M.Sc. (**summa cum laude**), Electrical Engineering, Technion  
2002 B.Sc. (**summa cum laude**), Electrical Engineering, Technion

### CURRENT POSITIONS

Since 2018 *Full Professor*, Department of Computer Science, Technion, Israel  
Dan Broida Academic Chair, Schmidt Career Advancement Chain in Artificial Intelligence  
Since 2019 *Co-founder and Chief Scientist*, Sibylla, UK  
Since 2014 *Co-founder and Chief Scientist*, Videocites, Israel

### PREVIOUS POSITIONS (SELECT)

2012–2021 *Principal Engineer*, Perceptual Computing Group, Intel, Israel/USA  
2016–2018 *Associate Professor*, Department of Computer Science, Technion, Israel  
2013–2016 *Associate Professor*, School of Electrical Engineering, Tel Aviv University, Israel

### SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

*Completed*: M.Sc.: 27 · Ph.D.: 7 · Postdoc. 3 ♦ *Ongoing*: M.Sc.: 6 · Ph.D.: 10

### MEMBERSHIPS OF SCIENTIFIC SOCIETIES

*European Laboratory for Learning and Intelligent Systems (ELLIS)* ♦ **Fellow** since 2020  
*Institute of Electrical and Electronics Engineers (IEEE)* ♦ **Fellow** since 2018  
*Association for Computing Machinery (ACM)* ♦ **Member** since 2012  
*Society for Industrial and Applied Mathematics (SIAM)* ♦ **Member** since 2016

### CURRENT RESEARCH GRANTS (SELECT)

2023 Horizon Europe Framework Programme “*An innovative non-contact and harmless screening modality set to change the course of breast cancer detection and patient monitoring (ThermoBreast)*” (PI) · EUR 650K

- 2022 Israel Innovation Authority “*Self-supervised learning on multimodal inputs*” (PI joint with. Dr. Chaim Baskin) · ILS 1.1M
- 2021 Israel Council for Higher Education “*Model-Based Geometrical Neural Networks: Construction, Applications, and Theory*” (PI joint with. M. Elad and Y. Romano) · ILS 1.8M
- 2021 Binational Science Foundation (BSF) “*Hardware-Aware Optimization of Graph Neural Networks*” (PI joint with R. Dreslinski, University of Michigan) · USD 250K
- 2021 Israel Innovation Authority “*Smart Imaging for Gimbal-Less Image Stabilization (consortium)*” · ILS 1.5M
- 2020 The Prime Minister's Office, “*Biometric recognition via beating rate variability analysis*” (PI joint with Prof. Yael Yaniv) · USD 110K
- 2020 European Research Council (ERC) consolidator grant “*Acoustics-based drone navigation and interaction (EARS)*” (PI) · EUR 2M

## BIBLIOMETRICS

Citations (Google Scholar): **16,984** · h-index: **69** · i10-index: 189

## FULL LIST OF PUBLICATIONS

<https://bron.cs.technion.ac.il/publications>

## LIST OF PUBLICATIONS (SELECT)

- [1] A. Rosenberg, A. Marx, A. M. Bronstein, [Codon-specific Ramachandran plots show amino acid backbone conformation depends on identity of the translated codon](#), Nature Communications, 2022
- [2] E. Rozenberg, A. Karnieli, O. Yesharim, J. Foley-Comer, S. Trajtenberg-Mills, D. Freedman, A. M. Bronstein, A. Arie, [Inverse design of spontaneous parametric downconversion for generation of high-dimensional qudits](#), Optica 9, 602-615, 2022
- [3] Y. Elul, A. Rosenberg, A. Schuster, A. M. Bronstein, Y. Yaniv, [Meeting the unmet needs of clinicians from AI systems showcased for cardiology with deep-learning-based ECG analysis](#), PNAS 2021
- [4] A. Boyarski, S. Vedula, A. M. Bronstein, [Spectral geometric matrix completion](#), Proc. Mathematical and Scientific Machine Learning, 2021
- [5] D. Fordham et al., Embryologist agreement when assessing blastocyst implantation probability: is data-driven prediction the solution to embryo assessment subjectivity? Human Reproduction, 37(10), 2022
- [6] N. Talati, H. Ye, S. Vedula, K.-Y. Chen, Y. Chen, D. Liu, Y. Yuan, D. Blaauw, A. M. Bronstein, T. Mudge, R. Dreslinski, [Mint: An Accelerator For Mining Temporal Motifs](#), Proc. MICRO, 2022
- [7] Y. Nemcovsky, M. Jacoby, A. M. Bronstein, C. Baskin, [Physical passive patch adversarial attacks on visual odometry systems](#), Proc. ACCV, 2022
- [8] E. Amrani, A. M. Bronstein, [Self-supervised classification network](#), Proc. ECCV, 2022
- [9] T. Weiss, S. Vedula, O. Senouf, O. Michailovich, A. M. Bronstein, [Towards learned optimal q-space sampling in diffusion MRI](#), Proc. Computational Diffusion MRI, Proc. MICCAI 2020
- [10] D. H. Silver, M. Feder, Y. Gold-Zamir, A. L. Polsky, S. Rosentraub, E. Shachor, A. Weinberger, P. Mazur, V. D. Zukin, A. M. Bronstein, [Data-driven prediction of embryo implantation probability using IVF time-lapse imaging](#), Proc. MIDL, 2020