

Shayan Aziznejad

PERSONAL INFORMATION

Birthday: 11 September, 1994

Language: Persian (Native), Azerbaijani (Native), English (Fluent), French (Intermediate)

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EDUCATION

EPFL, Lausanne, Switzerland August 2017 - August 2022(*Expected*)

- Ph.D., **Electrical Engineering**, Biomedical Imaging Group
- Advisor: Prof. Michael Unser

Sharif University of Technology, Tehran, Iran September 2012 - June 2017

- B.Sc., **Electrical Engineering**, Communication Systems
- B.Sc., **Pure Mathematics** (Double Major Program)

Allameh Helli High School (branch of NODET*) September 2008 - June 2012

- Diploma in Mathematics and Physics

*National Organization for Development of Exceptional Talents

HONOR AND AWARDS

- Best Student Paper Award, **ICASSP'19** 2019
- Member of Exceptional Talents Community of Sharif University 2012-2017
- **Gold Medal**, National Mathematical Olympiad, Iran 2011

SUPERVISED STUDENTS

0.1 Master's Thesis

- Eliana Renzo 2021
- Joaquim Campos 2019
- Leello Dadi 2019

0.2 Summer Internship

- Mehrsa Pouria (with D. Sage) 2020
- Tina Behnia (with P. Bohra) 2020
- Alireza Naderi 2018

0.3 Master Semester Project

- Haojun Zhu (with A. Goujon) 2021
- Mickael Gindroz (with T. Pham) 2021
- Benoit Knuchel (with T. Debarre) 2021
- Moulik Choraria (with J. Yoo) 2020
- Arnaud Panatier (with A. Badoual) 2018

TEACHING

TA at EPFL

- Image Processing II Spring 2018, 2019
- Image Processing I Fall 2017, 2018, 2020
- Signals and Systems II Spring 2020, 2021
- Signals and Systems I Fall 2019

TA at Sharif University

- Game Theory Spring 2016
- Numerical Optimization Fall 2015
- Probability and It's Applications Fall 2015
- Engineering Probability and Statistics" Fall 2014, 2015
- Foundations of Mathematics Spring 2015

Other

- Math Olympiad Instructor 2012-2015

REVIEWERS FOR JOURNALS

IEEE Transactions on Signal Processing, IEEE Signal Processing Letters, IEEE Transactions on Circuits and Systems I, Journal of Machine Learning Research, Digital Signal Processing.

PUBLICATIONS

Under Review

- [P3] A. Goujon, **S. Aziznejad**, A. Naderi, M. Unser, "Shortest Multi-Spline Bases for Generalized Sampling," arXiv:2012.08954 [math.NA].
- [P2] **S. Aziznejad**, M. Unser, "Duality Mapping for Schatten Matrix Norms," arXiv:2009.07768 [math.FA].
- [P1] **S. Aziznejad**, J. Fageot, "Wavelet Compressibility of Compound Poisson Processes," arXiv:2003.11646 [cs.IT].

Journal Papers

- [J7] **S. Aziznejad**, M. Unser, "Multikernel Regression with Sparsity Constraint," SIAM Journal on Mathematics of Data Science, 2021.
- [J6] **S. Aziznejad**, J. Fageot, "Wavelet Analysis of the Besov Regularity of Lévy White Noises," Electronic Journal of Probability, 2020.
- [J5] P. Bohra, J. Campos, H. Gupta, **S. Aziznejad**, M. Unser, "Learning Activations in Deep (Spline) Neural Networks," IEEE Open Journal of Signal Processing, 2020.
- [J4] **S. Aziznejad**, H. Gupta, J. Campos, M. Unser, "Deep Neural Networks with Trainable Activations and Controlled Lipschitz Constant," IEEE Transactions on Signal Processing, 2020.
- [J3] L. Dadi*, **S. Aziznejad***, M. Unser, "Generating Sparse Stochastic Processes Using Matched Splines," IEEE Transactions on Signal Processing, 2020. *Equal contribution

- [J2] J. Fageot, **S. Aziznejad**, M. Unser, V. Uhlmann, "Support and Approximation Properties of Hermite Splines," Journal of Computational and Applied Mathematics, 2020.
- [J1] T. Debarre, **S. Aziznejad**, M. Unser, "Hybrid-Spline Dictionaries for Continuous-Domain Inverse Problems," IEEE Transactions on Signal Processing, 2019.

Conference Proceedings

- [C6] M. Pourya, **S. Aziznejad**, M. Unser, D. Sage, "GraPhiC: Graph-Based Hierarchical Clustering for Single-Molecule Localization Microscopy," International Symposium on Biomedical Imaging (ISBI'21), 2021.
- [C5] **S. Aziznejad**, E. Soubies, M. Unser, "Dictionary Learning with Statistical Sparsity in the Presence of Noise," European Signal Processing Conference (EUSIPCO'20), 2020.
- [C4] **S. Aziznejad**, A. Naderi, M. Unser, "Optimal Spline Generators for Derivative Sampling," International Conference on Sampling Theory and Applications (SampTA'19), 2019.
- [C3] **S. Aziznejad**, M. Unser, "Deep Spline Networks with Control of Lipschitz Regularity," Best student paper award, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'19), 2019.
- [C2] Delfi, G., **Aziznejad, S.**, Amani, S., Babaie-Zadeh, M. and Jutten, C., "A generalization of weighted sparse decomposition to negative weights," IEEE European Signal Processing Conference (EUSIPCO'17), 2017.
- [C1] Asadi, E., **Aziznejad, S.**, Amerimehr, M.H. and Amini, A., 2017. A fast matrix completion method for index coding," IEEE European Signal Processing Conference (EUSIPCO'17), 2017.