PEROUZ TASLAKIAN

Research Scientist (AI)

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EXPERIENCE

Senior Research Scientist
Samsung Electronics

📅 Jul 2021 – Ongoing   📍 Montreal, QC

- Design machine learning techniques to address challenges that arise in wireless communication networks, ranging from detecting anomalies in network structures to understanding the root cause of network events.

Research Scientist / Research Lead
Element AI

📅 Jun 2017 – Jul 2021   📍 Montreal, QC

- Led the Human Decision Support Research Program that conducts AI research in the areas of forecasting, causal inference, and graph learning.
- Managed a team of Applied / Research Scientists and interns working on various research projects.
- Published research papers in high-tier AI conferences in the area of graph and knowledge graph learning.
- Was part of the team responsible for conducting applied research to integrate low-data learning functionality to the company products.

Quantitative Strategist
Morgan Stanley

📅 Feb 2017 – Jun 2017   📍 Montreal, QC

- Maintained and tuned complex optimization models for optimizing profit margins for foreign-exchange transactions.

Data Scientist / Software Engineer
ROI Research on Investment

📅 Sep 2015 – Feb 2017   📍 Montreal, QC

- Developed machine learning models for data analysis and prediction.

Professor & Chair of B.Sc. in Computational Sciences
American University of Armenia

📅 Mar 2012 – Jul 2015   📍 Yerevan, Armenia

- Conducted theoretical research in the area of computational discrete and geometry and published work in international peer-reviewed scientific journals and conference proceedings.
- Supervised graduate students, taught graduate and undergraduate courses in algorithmic theory and discrete mathematics.
- Lead R&D projects with industry partners to develop optimal and efficient algorithms for data compression and microchip stress distribution.
- Helped the development of the curriculum of the newly launched BSc in Computational Sciences program, served on committees responsible for making policy decisions on the academic aspects of the programs.

EDUCATION

Postdoctoral Researcher
Université Libre de Bruxelles

📅 Dec 2008 – Dec 2011

Discrete and Combinatorial Geometry

Ph.D. in Computer Science
McGill University

📅 Sep 2004 – Feb 2009

Computational Geometry

M.Sc. in Computer Sciences
Concordia University

📅 Sep 2002 – Jun 2004

Message Broadcasting in Networks

LANGUAGES

English   ●●●●●
French   ●●●○○

OTHER FACTS

👤 **Inspiring women in tech**
I run All-Girl Hack Night, a meetup group that comes together once a month to discuss topics in technology.

📈 **Patents**
I have filed three patents for inventions in machine learning.

✌ **Paul Erdős**
I have an Erdős number of 2.

STRENGTHS

Fundamental Research   Machine Learning

Deep Learning   Technical Writing

Applied Research

Mathematical Modeling

Research Program Management

PUBLICATIONS

👥 Conference Proceedings

- Brouillard, Philippe et al. (2022). "Typing assumptions improve identification in causal discovery". In: *Causal Learning and Reasoning (CLeaR)*.

- Fatemi, Bahare et al. (July 2020). "Knowledge Hypergraphs: Prediction Beyond Binary Relations". In: *Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence, IJCAI-20*, pp. 2191–2197.

- Cucurull, Guillem, Perouz Taslakian, and David Vazquez (2019). "Context-aware visual compatibility prediction". In: *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, CVPR-19*, pp. 12617–12626.

- Karapetyan, Nare et al. (2017). "Efficient multi-robot coverage of a known environment". In: *2017 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE, pp. 1846–1852.

- Barba, Luis, Prosenjit Bose, jean-Lou De Carufel, et al. (Aug. 2014). "Continuous Yao Graphs". In: *Proceedings of the 25th Canadian Conference on Computational Geometry (CCCG 2014)*. Halifax, NS, Canada.

- Bose, Prosenjit, Jean-Lou De Carufel, et al. (2014). "Competitive Online Routing on Delaunay Triangulations". In: *Algorithm Theory – 14th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT14)*. Vol. 8503. Lecture Notes in Computer Science. Springer International Publishing, pp. 98–109.

- Aichholzer, Oswin, Sarah R. Allen, et al. (Sept. 2013). "Sum of Squared Edges for MST of a Point Set in a Unit Square". In: *Proceedings of the 16th Japan Conference on Discrete and Computational Geometry and Graphs (JCDCG 2013)*.

- Aloupis, Greg, Hebert Pérez-Rosés, et al. (2013). "Fitting voronoi diagrams to planar tesselations". In: *International Workshop on Combinatorial Algorithms*, pp. 349–361.

- Cardinal, Jean et al. (Mar. 2011). "Cannibal Animal Games: a new variant of Tic-Tac-Toe". In: *Proceedings of the 27th European Workshop on Computational Geometry (EuroCG 2011)*. Morschach, Switzerland, pp. 131–134.

- Aloupis, Greg, Jean Cardinal, Sébastien Collette, et al. (Apr. 2010). "Matching Points with Things". In: *Proceedings of the 9th Latin American Theoretical Informatics (LATIN 2010)*. Lecture Notes in Computer Science (LNCS), volume 6034. Oaxaca, Mexico: Springer-Verlag, pp. 456–467.

- Hubard, Isabel and Perouz Taslakian (Aug. 2010). "Deflating Polygons to the Limit". In: *Proceedings of the 22nd Canadian Conference on Computational Geometry (CCCG 2010)*. Winnipeg, MB, Canada, pp. 67–70.

- Bose, Prosenjit, Jean Cardinal, Sebastien Collette, et al. (Aug. 2009). "Relaxed Gabriel Graphs". In: *Proceedings of the 21st Canadian Conference on Computational Geometry (CCCG 2009)*. Vancouver, BC, Canada, pp. 169–172.

- Bremner, David, Erik D. Demaine, et al. (Mar. 2009). "Reconstructing Points on a Circle from Labeled Distances". In: *Proceedings of the 25th European Workshop on Computational Geometry (EuroCG 2009)*. Brussels, Belgium, pp. 155–158.

- Gomez-Martin, Francisco, Perouz Taslakian, and Godfried T. Toussaint (Oct. 2008a). "Convergence of the shadow sequence of inscribed polygons". In: *Proceedings of the 18th Fall Workshop on Computational Geometry (FWCG 2008)*. Troy, NY, USA, pp. 10–11.

- – (2008b). "Evenness preserving operations on musical rhythms". In: *Proceedings of the Canadian Conference on Computer Science and Software Engineering (C3S2E '08)*. Montreal, Quebec, Canada: ACM, pp. 121–123.

- O'Rourke, Joseph, Perouz Taslakian, and Godfried T. Toussaint (Aug. 2008). "A Pumping Lemma for Homometric Rhythms". In: *Proceedings of the 20th Canadian Conference on Computational Geometry (CCCG 2008)*. Montréal, QC, Canada, pp. 121–123.

- Aloupis, Greg, Brad Ballinger, et al. (Aug. 2007). "Vertex Pops and Popturns". In: *Proceedings of the 19th Canadian Conference on Computational Geometry (CCCG 2007)*. Ottawa, ON, Canada, pp. 137–140.

- Buchin, Kevin et al. (Aug. 2007). "On Rolling Cube Puzzles". In: *Proceedings of the 19th Canadian Conference on Computational Geometry (CCCG 2007)*. Ottawa, ON, Canada, pp. 141–144.

- Demaine, Erik D., Martin L. Demaine, Thomas Fevens, et al. (June 2007). "Deflating The Pentagon". In: *Revised Papers from the Kyoto International Conference on Computational Geometry and Graph Theory (KytoCGGT 2007)*. Lecture Notes in Computer Science (LNCS), volume 4535. Kyoto, Japan: Springer-Verlag, pp. 56–57.

- Demaine, Erik D., Martin L. Demaine, Diane L. Souvaine, et al. (Mar. 2007). "Deflating The Pentagon". In: *Proceedings of the 23rd European Workshop on Computational Geometry (EuroCG 2007)*. Graz, Austria, pp. 10–14.

- Damian, Mirela et al. (Aug. 2006). "Curves in the Sand: Algorithmic Drawing". In: *Proceedings of the 18th Canadian Conference on Computational Geometry (CCCG 2006)*. Kingston, ON, Canada, pp. 11–14.

- Demaine, Erik D., Francisco Gomez-Martin, et al. (Aug. 2005). "The Distance Geometry of Deep Rhythms and Scales". In: *Proceedings of the 17th Canadian Conference on Computational Geometry (CCCG 2005)*. Windsor, ON, Canada, pp. 160–163.

- Harutyunyan, Hovhannes A. and Perouz Taslakian (July 2004). "Orderly Broadcasting in a 2D Torus". In: *Proceedings of the 8th International IEEE Conference on Information Visualization (IV 2004)*. London, England, pp. 370–375.
- Taslakian, Perouz and Godfried T. Toussaint (Oct. 2004). "Hamiltonian Cycles in Sparse Vertex-Adjacency Duals". In: *Proceedings of the 14th Fall Workshop on Computational Geometry (FWCG 2004)*. Boston, MA, USA, pp. 30–31.

🗎 Journal Articles

- Mauroy, Alexandre et al. (2016). "The four bars problem". In: *Nonlinearity* 29.9, pp. 2657–2673.
- Aichholzer, Oswin, Sang Won Bae, et al. (2014). "Theta-3 is connected". In: *Computational Geometry* 47.9, pp. 910–917.
- Barba, Luis, Prosenjit Bose, Mirela Damian, et al. (2014). "New and Improved Spanning Ratios for Yao Graphs". In: *Journal of Computational Geometry* 6.9.
- Bremner, David, Timothy M. Chan, et al. (2014). "Necklaces, Convolutions, and X + Y". in: *Algorithmica* 69 (2), pp. 294–314.
- Aloupis, Greg, Jean Cardinal, Sébastien Collette, et al. (2013). "Non-crossing Matchings of Points with Geometric Objects". In: *Computational Geometry: Theory and Application* 46.1, pp. 78–92.
- Bose, Prosenjit, Jean Cardinal, Sébastien Collette, et al. (2013). "Coloring and Guarding Arrangements". In: *Discrete Mathematics & Theoretical Computer Science* 15.3.
- Campos, Victor et al. (2013). "Transversals in Trees". In: *Journal of Graph Theory* 73.1, pp. 32–43.
- Aloupis, Greg, Jean Cardinal, Sébastien Collette, et al. (2011). "Colorful Strips". In: *Graphs and Combinatorics* 27.3, pp. 327–339.
- Demaine, Erik D., Francisco Gomez-Martin, et al. (July 2009). "The Distance Geometry of Music". In: *Computational Geometry: Theory and Application* 42.5, pp. 429–454.
- Gomez-Martin, Francisco, Perouz Taslakian, and Godfried T. Toussaint (Mar. 2009a). "Interlocking and Euclidean Rhythms". In: *Journal of Mathematics and Music* 3.1, pp. 15–30.
- – (Mar. 2009b). "Structural Properties of Euclidean Rhythms". In: *Journal of Mathematics and Music* 3.1, pp. 1–14.
- Demaine, Erik D., Martin L. Demaine, Perouz Taslakian, et al. (June 2007). "Sand Drawings and Gaussian Graphs". In: *Journal of Mathematics and the Arts*, pp. 125–132.