

Education

University of California, Berkeley (Berkeley, CA)	2018 - 2020 ¹
Electrical Engineering and Computer Science (Honors)	GPA: 4.0
Applied Mathematics (Honors)	GPA: 4.0
Los Angeles Valley College (Valley Glen, CA)	2016 - 2018
Electrical Engineering and Computer Science	Cumulative GPA: 4.0

Experience

Massachusetts Institute of Technology (Cambridge, MA²) May 2020 - Present
Visiting Undergraduate Researcher (The Probabilistic Computation Group)

- Worked on fully Bayesian image-grounded natural language processing models.
- Contributed to the GenSceneGraphs library in close collaboration with the head software engineer.
- Worked on efficient probabilistic inference in open-universe models in Gen.

University of California, Berkeley (Berkeley, CA) August 2019 - Present
Undergraduate Researcher (Adviser: Stuart Russell)

- Worked on a novel Bayesian model of information extraction by inferring a grounded model.
- Developed efficient MCMC proposal distributions. Used BLOG and Gen for prototyping.

University of California, Los Angeles (Los Angeles, CA) Summer 2018
Undergraduate Researcher (Computational and Applied Mathematics REU)

- Used probabilistic and algebraic topic models to predict spatiotemporal patterns in tweets.
- Contributed to a novel topic model with high semantic coherence by combining non-negative matrix factorization and word embedding.

NASA Jet Propulsion Laboratory (Pasadena, CA) February - May 2017
Student Independent Research Intern (Education Office Affiliate)

- Single-handedly designed and developed a data management tool (2kLOC in a 10kLOC C/Python codebase) in close collaboration with JPL QA engineers.
- Designed and implemented a query parser, a network protocol, and multiple synchronized producer-consumer interactions for distributed processing.

Heavy Iron Studios (Manhattan Beach, CA) Summer 2017
Programming Intern

- Developed augmented reality dynamic game-space generation and path-finding agents.

Publications

- G. Matheos, A. K. Lew, **M. Ghavamizadeh**, S. J. Russell, M. F. Cusumano-Towner, and V. K. Mansinghka. Scalable inference in open-universe probabilistic programs via automated involutive MCMC. In Preparation.
- G. Matheos, A. K. Lew, **M. Ghavamizadeh**, S. J. Russell, M. F. Cusumano-Towner, and V. K. Mansinghka. Transforming Worlds: Automated Involutive MCMC for Open-Universe Probabilistic Models. Under review at The 3rd Symposium on Advances in Approximate Bayesian Inference, 2021.
- D. J. Arnold, J. Du, K. Flood, **M. Ghavamizadeh**, B. Kim, C. Parkinson, M. Plack, S. Tan, H. Yao, A. L. Bertozzi, P. J. Brantingham, “Dynamic Topic Modeling: Spatiotemporal Analysis of Los Angeles Twitter Data,” Algorithms for Threat Detection (ATD) Annual Workshop Washington, D.C. October 10-11, 2018

Skills and Coursework

Programming Languages Proficient in C/C++, Python, Julia, and BLOG. Prior experience with Java, assembly (AVR, RISC-V), Ruby, Scheme, and JavaScript.

Mathematical Modeling Bayesian modeling, numerical analysis.

Miscellaneous Experienced in git, Linux, L^AT_EX, and Agile development.

Languages Persian (Native), English (Full Professional Proficiency)

Coursework Probability Theory (Graduate), Probability for Applications (Graduate), Numerical Simulation and Modeling (Graduate), Machine Learning, Introduction to Artificial Intelligence, Efficient Algorithms and Intractable Problems, Second Course in Mathematical Analysis.

¹ expected graduation: December 2020 ² remote

Awards and Achievements

- Jack Kent Cooke Foundation Undergraduate Transfer Scholarship (2018): \$40,000 per year for three years, ~40 recipients nationwide.
- NSF S-STEM Scholarship (2018): \$12,000 scholarship awarded to 14 undergraduate transfer students at UC Berkeley interested in graduate studies.
- Institutional Scholarships: Dr. Wolfgang Lederer Scholarship for Undergraduate Immigrant Students (\$5,658), The George Douglass Scholarship (\$600), The Susanna Fiaccan Memorial Scholarship (\$8,208), William Glenn Homan Scholarship (\$10,000)
- Member of Phi Beta Kappa and Tau Beta Pi.
- UC Berkeley Deans Honors list to date.
- ACM ICPC Southern California Regional (2017): division II runner-up.
- American Mathematical Association of Two Year Colleges (AMATYC) Student Mathematics Competition 10th place nation-wide (2017).
- RoboCup Regional (IranOpen) Junior Soccer: open league quarter-finalist (2013, 14), lightweight league quarter-finalist and super-team champion (2015).
- Ranked in the top ~0.05% in Iran's National University Entrance Exam (2015).