Ava Amini

ava.amini@microsoft.com
1 Memorial Drive, Cambridge, MA 02142

EDUCATION

Harvard University — Cambridge, MA
Doctor of Philosophy (PhD); Biophysics — *2016 – 2021*

Massachusetts Institute of Technology (MIT) — Cambridge, MA
Bachelor of Science (SB); Computer Science and Molecular Biology; GPA 5.0/5.0 — *2012 – 2016*

EXPERIENCE

Microsoft Research — Cambridge, MA
Senior Researcher — *June 2021 - present*
Developing new AI methods to advance biological discovery and engineering.

MIT Introduction to Deep Learning — EECS, MIT
Lead Organizer and Lecturer — *2018 - present*
Developed entire course curriculum, taught lectures, managed sponsorships from industrial partners, published the content online, and organized all course operations.

Laboratory for Multiscale Regenerative Technologies (LMRT) — Koch Institute, MIT
Graduate Student — *Jan. 2017 - May 2021*
Thesis research on engineering novel technologies for disease diagnosis and monitoring. Advisor: Sangeeta N. Bhatia.

Synthetic Biology Group — Research Laboratory of Electronics, MIT
Undergraduate Researcher — *Sep. 2013 - June 2016*
Synthetic recombinase-based state machines in living cells. Advisor: Timothy K. Lu.

Seven Bridges Genomics — Cambridge, MA
Research Intern — *June 2015 - Sep. 2015*
Development of the Seven Bridge Cancer Genomics Cloud and extensions to the Seven Bridges API. Advisor: Brandi Davis-Dusenbery.

Wang Genomics Lab — Keck School of Medicine, USC
Undergraduate Researcher — *May 2013 - Sep. 2013*
Single cell transcriptomics. Advisor: Kai Wang.

ALEKS Corporation — Irvine, CA
Research Intern — *June 2011 - Aug. 2012*
Creation of example problems for a new Pre-Algebra textbook written as a supplement to the ALEKS learning software. Advisor: Jean-Claude Falmagne.

Chubb-Wright Lab — University of California, Irvine
Research Intern — *Feb 2011 - Aug. 2011*
Psychophysical representation of visual texture recognition. Advisor: Charlie Chubb.

PUBLICATIONS

Formerly Ava P. Soleimany. *Equal contribution. †Corresponding author.

41. DenAdel, A., Hughes, M., Thoutam, A., Gupta, A., Navia, A.W., Fusi, N., Raghavan, S., Winter, P.S., **Amini, A.P.**†, Crawford, L.† Evaluating the role of pre-training dataset size and diversity on single-cell foundation model performance. *bioRxiv* 2024. [link]

40. Boiarsky, R., Singh, N.M., Buendia, A., **Amini, A.P.**, Getz, G., Sontag, D. Deeper evaluation of a single-cell foundation model. *Nature Machine Intelligence* 2024. [link]

39. Alamdari, S., Thakkar, N., van den Berg, R., Tenenholtz, N., Strome, B., Moses, A., Lu, A.X., Fusi, N., **Amini, A.P.**†, Yang, K.K.†, Protein generation with evolutionary diffusion: sequence is all you need. *bioRxiv* 2024. [link]

38. Char, S., Corley, N., Alamdari, S., Yang, K.K., **Amini, A.P.**†, ProtNote: a multimodal method for protein-function annotation. *bioRxiv* 2024. [link]

37. Liu, N., Kattan, W.E., Mead, B.E., Kummerlowe, C., Cheng, T., Ingabire, S., Cheah, J.H., Soule, C.K., Vrcic, A., McIninch, J.K. and Triana, S., Guzman, M., Dao, T.T., Peters, J.M., Lowder K.E., Crawford. L., **Amini, A.P.**, Blainey, P.C., Hahn, W.C., Cleary, B., Bryson, B., Winter, P.S., Raghavan, S., Shalek, A.K., Scalable, compressed phenotypic screening using pooled perturbations. *Nature Biotechnology* 2024. [link]

36. Wang, C., Alamdari, S., Domingo-Enrich, C., **Amini, A.P.**, Yang, K.K., Towards deep learning sequence-structure co-generation for protein design. *arXiv* 2024. [link]

35. Li, F.Z., **Amini, A.P.**, Yue, Y., Yang, K.K.. Lu, A.X., Feature reuse and scaling: Understanding transfer learning with protein language models. *Proceedings of the 41st International Conference on Machine Learning* 2024. [link]

34. Winter, P.S., Ramseier, M.L., Navia, A.W., et al., Mutation and cell state compatibility is required and targetable in Ph+ acute lymphoblastic leukemia minimal residual disease. *bioRxiv* 2024. [link]

33. DenAdel, A., Ramseier, M.L., Navia, A.W., Shalek, A.K., Raghavan, S., Winter, P.S., **Amini, A.P.**, Crawford, L., A knockoff calibration method to avoid over-clustering in single-cell RNA-sequencing. *bioRxiv* 2024. [link]

32. Nwizu, C., Hughes, M., Ramseier, M.L., Navia, A.W., Shalek, A.K., Fusi, N., Raghavan, S., Winter, P.S., **Amini, A.P.**[†], Crawford, L.[†], Scalable nonparametric clustering with unified marker gene selection for single-cell RNA-seq data. *bioRxiv* 2024. [link]

31. Wu, K.E., Yang, K.K., van den Berg, R., Alamdari, S., Zou, J.Y., Lu, A.X., **Amini, A.P.**[†], Protein structure generation via folding diffusion. *Nature Communications* 2024. [link]

30. Martin-Alonso, C., Tabrizi, S., Xiong, K., Blewett, T., Sridhar, S., Crnjac, A., Patel, S., An, Z., Bekdemir, A., Shea, D., Wang, S.T., Rodriguez-Aponte, S., Naranjo, C.A., Rhoades, J., Kirkpatrick, J.D., Fleming, H.E., **Amini, A.P.**, Golub, T.R., Love, J.C., Bhatia, S.N., Adalsteinsson, V.A., Priming agents transiently reduce the clearance of cell-free DNA to improve liquid biopsies. *Science* 2024. [link]

29. Kedzierska, K.Z., Crawford, L., **Amini, A.P.**, Lu, A.X., Assessing the limits of zero-shot foundation models in single-cell biology. *bioRxiv* 2023. [link]

28. Killian, T.W., Zhang, H., Hartvigsen, T., **Amini, A.P.**, Continuous time evidential distributions for irregular time series. *arXiv* 2023. [link]

27. Rios-Martinez, C., Bhattacharya, N., **Amini, A.P.**, Crawford, L., Yang, K.K., Deep self-supervised learning for biosynthetic gene cluster detection and product classification. *PLOS Computational Biology* 2023. [link]

26. **Amini, A.P.**, Yang, K.K., From noise to protein with image models. *Nature Computational Science* 2023. [link]

25. Greenman, K.P., **Amini, A.P.**[†], Yang, K.K.[†] Benchmarking uncertainty quantification for protein engineering. *bioRxiv* (*preprint, in press*), 2023. [link]

24. Aung, A., Cui, A., Maiorino, L., **Amini, A.P.**, Gregory, J.R., Bukenya, M., Zhang, Y., Lee, H., Cottrell, C.A., Morgan, D.M., Silva, M., Suh, H., Kirkpatrick, J.D., Amlashi, P., Remba, T., Froehle, L.M., Xiao, S., Abraham, W., Adams, J., Love, J.C., Huyett, P., Kwon, D.S., Hacohen, N., Schief, W.R., Bhatia, S.N., Irvine, D.J., Low protease activity in B cell follicles promotes retention of intact antigens after immunization. *Science*, 2023. [link]

23. Martin Alonso, C.*, Tabrizi, S.*, Xiong, K., Blewett, T., Patel, S., An, Z., Sridhar, S., Bekdemir, A., Shea, D., **Amini, A.P.**, Wang, S.T., Kirkpatrick, J.D., Rhoades, J., Golub, T.R., Love, J.C., Adalsteinsson, V.A., Bhatia, S.N., A nanoparticle priming agent reduces cellular uptake of cell-free DNA and enhances the sensitivity of liquid biopsies. *bioRxiv*, 2023. [link]

22. **Amini, A.P.***, Kirkpatrick, J.D.*, Wang, C.S., Jaeger, A.M., Su, S., Naranjo, S., Zhong, Q., Cabana, C.M., Jacks, T., Bhatia, S.N., Multiscale profiling of protease activity in cancer. *Nature Communications*, 2022. [link]

21. Wu, K.E., Yang, K.K., van den Berg, R., Zou, J.Y., Lu, A.X., **Amini, A.P.**[†] Protein structure generation via folding diffusion. *arXiv* (*preprint, under review*), 2022. [link]

20. Wang, A., **Amini, A.P.**, Lu, A.X., Yang, K.K. Learning from physics-based features improves protein property prediction. *NeurIPS Workshop on Machine Learning in Structural Biology*, 2022. [link]

19. **Soleimany, A.P.***[†], Martin-Alonso, C.*, Anahtar, M.*, Wang, C.S., Bhatia, S.N.[†], Protease activity analysis: a toolkit for analyzing enzyme activity data. *ACS Omega*, 2022. [link]

18. Anahtar, M., Chan, L.W., Ko, H., Rao, A., **Soleimany, A.P.**, Khatri, P., Bhatia, S.N., Host protease activity classifies pneumonia etiology. *Proceedings of the National Academy of Sciences*, 2022. [link]

17. Kirkpatrick, J.D., **Soleimany, A.P.**, Dudani, J.S., Liu, H., Lam, H.C., Priolo, C., Henske, E.P.[†], Bhatia, S.N.[†], Protease activity sensors enable real-time treatment response monitoring in lymphangioleiomyomatosis. *European Respiratory Journal*, 2022. [link]

16. Bekdemir, A., Tanner, E.E.L., Kirkpatrick, J., **Soleimany, A.P.**, Mitragotri, S., Bhatia, S.N., Ionic liquid-mediated transdermal delivery of thrombosis-detecting nanosensors. *Advanced Healthcare Materials*, 2022. [link]

15. He, J.*, Nissim, L.*, **Soleimany, A.P.***, Binder-Nissim, A., Fleming, H.E., Lu, T.K., Bhatia, S.N., Synthetic circuit-driven expression of heterologous enzymes for disease detection. *ACS Synthetic Biology*, 2021. [link]

14. **Soleimany, A.P.***, Amini, A.*, Goldman, S.*, Rus, D., Bhatia, S.N., Coley, C.W., Evidential deep learning for guided molecular property prediction and discovery. *ACS Central Science*, 2021. [link]

13. **Soleimany, A.P.***, Kirkpatrick, J.D.*, Su, S., Dudani, J.S., Zhong, Q., Bekdemir, A., Bhatia, S.N., Activatable zymography probes enable in situ localization of protease dysregulation in cancer. *Cancer Research*, 2021. [link]

12. Amini, A., Schwarting, W., **Soleimany, A.**, and Rus, D., Deep evidential regression. *Advances in Neural Information Processing Systems*, 2020. [link]

11. Mehta, N.K., Pradhan, R.V., **Soleimany, A.P.**, Moynihan, K.D., Rothschilds, A.M., Momin, N., Rakhra, K., Mata-Fink, J., Bhatia, S.N., Wittrup, K.D., Irvine, D.J., Pharmacokinetic tuning of protein–antigen fusions enhances the immunogenicity of T-cell vaccines. *Nature Biomedical Engineering*, 2020. [link]

10. **Soleimany, A.P.**, Bhatia, S.N., Activity-based diagnostics: an emerging paradigm for disease detection and monitoring. *Trends in Molecular Medicine*, 2020. [link]

9. Kirkpatrick, J.D.*, Warren, A.D.*, **Soleimany, A.P.***, Westcott, P.M.K., Voog, J.C., Martin-Alonso, C., Fleming, H.E., Tammela, T., Jacks, T., Bhatia, S.N., Urinary detection of lung cancer in mice via noninvasive pulmonary protease profiling. *Science Translational Medicine*, 2020. [link]

8. Schuerle, S., Furubayashi, M., **Soleimany, A.P.**, Gwisai, T., Huang, W., Voigt, C.A., Bhatia, S.N., Genetic encoding of targeted MRI contrast agents for tumor imaging. *ACS Synthetic Biology*, 2020. [link]

7. Loynachan, C.N.*, **Soleimany, A.P.***, Dudani, J.S., Lin, Y., Najer, A., Bekdemir, A., Chen, Q., Bhatia, S.N.[†], Stevens, M.M.[†], Renal clearable catalytic gold nanoclusters for in vivo disease monitoring. *Nature Nanotechnology*, 2019. [link]

6. **Soleimany, A.P.**, Suresh, H., Gonalez Ortiz, J. J., Shanmugam, D., Gural, N., Guttag, J., Bhatia, S.N., Image segmentation of liver stage malaria infection with spatial uncertainty sampling. *International Conference on Machine Learning Workshop on Computational Biology; arXiv*, 2019. [link]

5. Amini, A.*, **Soleimany, A.P.***, Schwarting, W., Bhatia, S.N., Rus, D., Uncovering and mitigating algorithmic bias through learned latent structure. *AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society*, 2019. [link]

4. Schuerle, S., **Soleimany, A.P.**, Yeh, T., Anand, G.M., Haberli, M., Fleming, H.E., Mirkhani, N., Qiu, S., Hauert, S., Wang, X., Nelson, B.J., Bhatia, S.N., Synthetic and living micropropellers for convection-enhanced nanoparticle transport. *Science Advances*, 2019. [link]

3. Chen, Y., Millstein, J., Liu, Y., Chen, G.Y., Chen, X., Stucky, A., Qu, C., Fan, J., Chang, X., **Soleimany, A.**, Wang, K., Zhong, J., Liu, J., Gilliland, F.D., Li, Z., Zhang, X., Zhong, J.F., Single-cell digital lysates generated by phase-switch microfluidic device reveal transcriptome perturbation of cell cycle. *ACS Nano*, 2018. [link]

2. Amini, A., **Soleimany, A.**, Karaman, S, Rus, D., Spatial uncertainty sampling for end-to-end control. *Neural Information Processing Systems Workshop on Bayesian Deep Learning*, 2017. [link]

1. Roquet, N., **Soleimany, A.P.**, Ferris, A.C., Aaronson, S., Lu, T.K., Synthetic recombinase-based state machines in living cells. *Science*, 2016. [link]

TEACHING

- **Lead organizer and lecturer**   MIT
  Introduction to Deep Learning, 6.S191   *2018 – present*
  Developed, organized, and taught MIT's official introductory course on deep learning methods and applications. MIT enrollment of 300+ students per year; over 50,000 registered students globally; over 11 million online lecture views.

- **Teaching fellow**   Harvard University
  Questions in Physical Biology, MCB 294   Fall 2019
  Seminar course on topics in biophysics, systems biology, physical biology, and bioengineering.

- **Teaching assistant**   MIT
  General Biochemistry, 7.05   Spring 2015, Spring 2016
  Lectured on course material in a weekly recitation section. Led review sessions, wrote problem sets, and facilitated and graded exams. Course taught by Matthew Vander Heiden, M.D., Ph.D. and Michael Yaffe, M.D., Ph.D.

- **Visiting teacher**   Rome, Italy
  Liceo Scientifico Nomentano   Jan. 2014
  Full time teacher; taught physics, chemistry, and English to Italian high school students.

- **Tutor**   MIT
  Biology & Chemistry departments   Sep. 2013 – June 2016

Research Mentorship

- **Alex Lee**: Microsoft Research PhD intern, 2024
- **Garyk Brixi**: Microsoft Research PhD intern, 2024
- **Kaeli Kaymak-Loveless**: Microsoft Research undergraduate intern, 2024
- **Sevahn Vorperian**: Microsoft Research PhD intern, 2023
- **Zeinab Navidi**: Microsoft Research PhD intern, 2023
- **Sadhana Lolla**: Microsoft Research undergraduate intern, 2023
- **Kasia Kedzierska**: Microsoft Research PhD intern, 2023
- **Giovanni Palla**: Microsoft Research PhD intern, 2023
- **Michael Wornow**: Microsoft Research PhD intern, 2023
- **Taylor Killian**: Microsoft Research PhD intern, 2022
- **Dan Yuan**: Microsoft Research PhD intern, 2022
- **Kevin Wu**: Microsoft Research PhD intern, 2022
- **Francesca-Zhoufan Li**: Microsoft Research PhD intern, 2022
- **Amy Wang**: Microsoft Research PhD intern, 2022
- **Megan Richards**: Microsoft Research undergraduate intern, 2022
- **Kevin Greenman**: Microsoft Research PhD intern, Jan. 2022
- **Carolina Rios-Martinez**: Microsoft Research undergraduate intern, 2021
- **Cathy Wang**: MIT PhD student, Jan. 2021 – June 2021
- **Carmen Martin-Alonso**: MIT PhD student, Jan. 2019 – June 2021
- **Susan Su**: MIT undergraduate, Sep. 2019 – June 2021
- **Ahmet Bekdemir**: MIT postdoctoral associate, June 2018 – Dec. 2018
- **Neha Kapate**: MIT PhD student, Sep. 2018 – Dec. 2018

Talks and Presentations

- **MIT Bioinformatics Seminar**   Cambridge, MA
  Invited talk   2024

- **The State of AI in Drug Discovery**   virtual
  Keynote talk & panel   2024

- **University of Wisconsin Bioinformatics Seminar**   virtual
  Invited talk   2024

- **Broad Institute ML4H Seminar**   Cambridge, MA (virtual)
  Invited talk   2024

- **Machine Learning in Computational Biology**   Seattle, WA
  Keynote talk   2024

- **MIT Biotechnology Group**   Cambridge, MA
  Invited talk   2024

- **Monday Girl Summit**   Toronto, CA
  Keynote talk & panel   2024

- **Imagination in Action AI Summit**   Cambridge, MA
  Keynote panel   2024

- **Black Women in Computational Biology seminar**   virtual
  Invited talk   2024

- **EPFL Applied ML Days** — virtual
  Invited talk — 2024
- **MIT Biotechnology Group** — Cambridge, MA
  Invited talk — 2024
- **Society for Laboratory Automation & Screening** — Boston, MA
  Invited talk — 2024
- **World Economic Forum, Microsoft Cafe** — Davos, Switzerland
  Keynote talk — 2024
- **NeurIPS Workshop on ML in Structural Biology** — New Orleans, LA
  Invited talk — 2023
- **Teen Vogue Summit** — Los Angeles, CA
  Keynote panel — 2023
- **Boston Protein Design & Modeling Club** — Boston, MA
  Invited talk — 2023
- **Broad Institute Models, Inference, & Algorithms** — Cambridge, MA
  Invited talk — 2023
- **Google Brain** — Cambridge, MA
  Invited talk — 2023
- **Young Presidents' Organization** — Cambridge, MA
  Keynote talk — 2023
- **National Academy of Engineering Frontiers of Engineering** — Boulder, CO
  Invited talk — 2023
- **Koch Institute WithInSight** — MIT
  Keynote talk — 2023
- **TEDx MIT** — Cambridge, MA
  Invited talk — 2023
- **ICLR Workshop on Physics for Machine Learning** — virtual
  Keynote talk — 2023
- **Boston University Center for Computing & Data Sciences** — Boston, MA
  Invited talk — 2023
- **Marble Center for Cancer Nanomedicine** — MIT
  Keynote talk — 2023
- **MILA AI Helps Ukraine Conference** — Montreal, CA
  Keynote talk — 2022
- **PRISME Technical Forum** — Carlsbad, CA
  Invited talk — 2022
- **Microsoft Research Summit** — Microsoft
  Invited talk — 2022
- **MILA Molecular Modeling and Drug Discovery Seminar** — virtual
  Keynote talk — 2022
- **ICML Adaptive Experimental Design and Active Learning in the Real World (ReALML)** — Baltimore, MD
  Keynote talk — 2022
- **Microsoft Research Intern Week** — Redmond, WA
  Invited talk — 2022
- **Advanced Regenerative Manufacturing Institute (ARMI) Annual Meeting** — Manchester, NH
  Invited talk — 2022
- **Flagship Pioneering AI Talks** — Cambridge, MA
  Invited talk — 2022
- **Broad Institute of MIT and Harvard** — Cambridge, MA
  Special seminar — 2022
- **MIT Department of Electrical Engineering and Computer Science** — Cambridge, MA
  Special seminar — 2022
- **Harvard University Department of Biomedical Informatics** — Harvard University
  Special seminar — 2022

- **Healthy ML Group Seminar** — MIT
  Invited talk — 2022
- **Dana Farber Cancer Institute Department of Data Science** — Dana Farber Cancer Institute
  Special seminar — 2022
- **Amgen Science Council** — Amgen (virtual)
  Invited talk — 2022
- **UC Berkeley and UCSF Program in Computational Precision Health** — UC Berkeley, UCSF
  Special seminar — 2022
- **University of Pennsylvania Department of Bioengineering** — Philadelphia, PA
  Special seminar — 2022
- **Columbia University Department of Biomedical Engineering** — Columbia University
  Special seminar — 2022
- **IBM Research Zurich** — IBM (virtual)
  Invited talk — 2021
- **Microsoft Research Summit** — Microsoft
  Invited talk — 2021
- **Koch Institute Focus Seminar** — MIT
  Invited talk — 2021
- **Ludwig Center for Molecular Oncology Retreat** — MIT
  Invited talk — 2021
- **Basil Hetzel Institute for Translational Health Research** — Adelaide, Australia (virtual)
  Invited talk — 2021
- **Virtual Seminar in Biomedical Science** — MIT
  Invited talk — 2021
- **Koch Institute Image Awards** — MIT
  Invited talk — 2021
- **Marble Center for Cancer Nanomedicine** — MIT
  Invited talk — 2021
- **Microsoft Research New England** — Microsoft Research
  Invited talk — 2021
- **NeurIPS Machine Learning for Molecules Workshop** — NeurIPS Conference
  Contributed talk — 2020
- **NeurIPS Machine Learning for Molecules Workshop** — NeurIPS Conference
  Poster — 2020
- **NeurIPS Bayesian Deep Learning Workshop** — NeurIPS Conference
  Poster — 2020
- **NeurIPS Women in Machine Learning** — NeurIPS Conference
  Poster — 2020
- **Embodied Intelligence Seminar** — MIT
  Contributed talk — 2020
- **Biophysics Program Retreat** — Harvard University
  Invited talk — 2020
- **Broad Institute Chemical Biology Meeting** — Cambridge, MA
  Invited talk — 2020
- **Harvard Biophysics Student Seminar** — Cambridge, MA
  Invited talk — 2019
- **Koch Institute for Cancer Research Retreat** — Falmouth, MA
  Poster — 2019
- **Early Detection of Cancer Conference** — Stanford, CA
  Poster — 2019
- **ICML Workshop on Computational Biology** — Long Beach, CA
  Poster — 2019
- **Broad Institute Blood Biopsy Meeting** — Cambridge, MA
  Invited talk — 2019

- **Ludwig Center for Molecular Oncology Retreat**   Dedham, MA
  Poster   *2019*
- **Biomedical Engineering Society Annual Meeting**   Atlanta, GA
  Contributed talk   *2018*
- **Ludwig Center for Molecular Oncology Retreat**   Dedham, MA
  Invited talk   *2019*
- **Gordon Research Conference, Proteolytic Enzymes and Their Inhibitors**   Barga, Italy
  Contributed talk   *2018*
- **Marble Center for Cancer Nanomedicine**   Cambridge, MA
  Invited talk   *2018*
- **Biomedical Engineering Society Annual Meeting**   Phoenix, AZ
  Contributed talk   *2017*

AWARDS

- **Rising Star, Women in AI**   VentureBeat
  2024 winner
  Honored as a woman in the early stage of her AI career who has demonstrated exemplary leadership traits by VentureBeat's Women in AI awards.
- **National Academy of Engineering (NAE) Frontiers of Engineering**   NAE
  2023 honoree
  Recognized as one of 81 highly accomplished early-career engineers by the National Academy of Engineering (NAE).
- **TEDx Speaker**   TEDx MIT
  2023
- **Koch Institute Image Awards**   MIT
  2021 winning image
- **National Science Foundation (NSF) Graduate Research Fellowship**   Harvard University
  Graduate Fellow, 2017 – 2021
- **Henry Ford II Scholar Award**   MIT
  2016 recipient
  To a senior engineering student who has maintained a cumulative average of 5.0 at the end of his/her seventh term and has exceptional potential for leadership.
- **AMITA Senior Academic Award**   MIT
  2016 recipient
  To an outstanding senior woman who has demonstrated the highest level of academic excellence through her coursework and related professional activities at MIT.
- **Vikki Auzenne Memorial Women's Tennis Leadership Award**   MIT
  2016 recipient
  To a member of the MIT varsity women's tennis team who best exemplifies the qualities of leadership through mentoring, advising, and counseling others, both on and off the court.
- **SuperUROP Outstanding Research Project Award**   MIT
  2015 recipient
- **MIT-EECS Wertheimer Undergraduate Research and Innovation Scholar**   MIT
  2014 recipient

LEADERSHIP AND OUTREACH

- **Microsoft ambassador on AI**   Cambridge, MA
  Speaking & outreach   *2023 – present*
  Engage with diverse public audiences as a Microsoft ambassador on AI. Serve as a leading voice in Microsoft's AI education initiatives and work directly with prominent media outlets, with a focus on female audiences. Select engagements include Teen Vogue, HerCampus, Monday Girl, and Imagination in Action.
- **Momentum AI**   Cambridge, MA
  Co-founder   *2021 – 2023*
  Co-founded and directed an outreach program that teaches AI to under-resourced and under-served high school students from the Boston area. Two week capstone program is a free, project-based deep-dive into AI on MIT's campus.
- **MIT Varsity Women's Tennis**   MIT
  Captain 2014 – 2016   *2012 – 2016*

- **MIT Leadership Training Institute** MIT
  Managing Director 2014 – 2016 *2012 – 2016*
  Directed a service-focused leadership program for underserved high school students from the Boston area.

- **MIT Freshman Leadership Program** MIT
  Counselor *2014 – 2016*
  Developed and counseled in annual pre-orientation program for MIT freshmen centered on personal empowerment, social justice, inclusivity and diversity, and leadership skill-building.

ACADEMIC SERVICE

- **Journal reviewing**: Cell, Nature Methods, Nature Machine Intelligence, Nature Communications, Bioengineering & Translational Medicine
- **Conference reviewing**: ICLR; ICML; AAAI; NeurIPS ML for Structural Biology, LMRL, ReALML, GenAIBio; ML for Computational Biology
- **Workshop & seminar leadership**: Microsoft Research New England colloquium series (Jan. 2024 – present), Co-chair Forbeck Forum on AI & Cancer (2025), NeurIPS ReALML Workshop organizer (2023)

SKILLS

- **Computational skills**: Python; Java; MATLAB; Unix/BASH; R; TensorFlow; PyTorch; machine learning; deep learning; data analysis; bioinformatics
- **Wet laboratory skills**: techniques in bioengineering, biochemistry, cancer biology, including: small animal pre-clinical models; chemical probe design; nanoparticle engineering; biochemical and proteomic assays; mammalian and bacterial cell culture; molecular biology assays; flow cytometry and FACS; RNA-seq and single-cell RNA-seq
- **Languages**: English (native), Farsi (fluent)