ANNAMARIE E. BAIR

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EDUCATION

Massachusetts Institute of Technology (MIT)

Master of Engineering in Computer Science — September 2019
Thesis: Molecular Graph Self Attention and Graph Convolution for Drug Discovery

Bachelor of Science in Computer Science and Engineering — June 2018
Minor in Brain and Cognitive Sciences

RESEARCH

Universitat Pompeu Fabra Complex Systems Lab, Prof. Ricard Sole — September 2019 - present
Fulbright Predoctoral Researcher — *Barcelona, Spain*

- Developed theory and wrote simulations for projects analyzing parabolic replicator dynamics and distributed biological intelligence.
- Chosen to deliver a research presentation on complex systems at the Fulbright Spain Mid-Year Seminar.

MIT CSAIL Clinical Decision Making Group, Prof. Peter Szolovits — May 2017 - September 2019
SuperUROP and Master's Research — *Cambridge, MA*

- Used graph convolutional networks with self-attention and position embeddings to perform molecule property prediction.
- Used machine learning methods to model gene expression data and analyze co-regulated genes.
- Work resulted in a poster presentation at the Women in Machine Learning (WiML) workshop.

MIT Interactive Robotics Group, Prof. Julie Shah — September 2015 - April 2016
UROP — *Cambridge, MA*

- Conducted experiments that assessed situational awareness in human-robot interaction.
- Performed statistical analysis of experimental results.
- Work resulted in a publication in The International Journal of Robotics Research (IJRR).

MIT Media Lab, Prof. Eric Klopfer — June - August 2015
UROP — *Cambridge, MA*

- Developed platform that organizes education standards across 15 countries to help teachers compare curricula with regard to student age and topic area.
- Wrote Natural Language Processing scripts in Python with NLTK.

MIT Koch Institute, Prof. Daniel Anderson — January - May 2015
UROP — *Cambridge, MA*

- Assisted with design and creation of siRNA (small interfering RNA) used for targeted drug delivery.
- Maintained and split cell cultures and assisted with assays.

INDUSTRY

Microsoft — June 2018 - August 2018
Software Engineering Intern — *Redmond, WA*

- Migrated data quality metrics from SQL to NoSQL database.
- Improved and refactored existing codebase using C#, U-SQL, and T-SQL.

Driver — June - August 2017
Software Engineering Intern — *San Francisco, CA*

- Built an API using Python, PostgreSQL, and Flask for a consumer technology company building a platform to give cancer patients access to new treatments.
- API stores patient information and integrates with internal services to automate ordering of medical diagnostic test kits from a third party vendor.

The New York Times — June - August 2016
Software Engineering Intern — *New York, NY*

- Designed and implemented improvements to a mobile website using Javascript, HTML, and CSS.

· Determined how to improve the user experience of a mobile web app in collaboration with a designer and carried project through the entire development process until the product was deployed to production.
· Created an iOS prototype for a social feature for The New York Times Cooking App.

TEACHING

MIT Women's Technology Program (WTP) Instructor June - July 2019
Math for Electrical Engineering and Computer Science *Cambridge, MA*

· Taught at a program for rising high school senior girls to gain exposure to computer science and engineering.
· Worked with three MIT student teaching assistants to prepare and deliver lectures on introductory math for computer science topics, including binary numbers, algorithms, linear algebra, and graph theory.

MIT Teaching Assistant September 2018 - June 2019
Introduction to Computer Science and Programming (6.00) *Cambridge, MA*

· Taught weekly recitation sections, wrote problem sets, held office hours.

MIT Lab Assistant January - June 2018
Introduction to Computer Science and Programming (6.00) *Cambridge, MA*

· Assisted students with problem sets, gave check-offs, debugged problem sets before release.

La Miranda School Instructor January 2018
Barcelona, Spain

· Developed lesson plans and taught math, coding, physics, biology, and English to 6th - 12th grade students.

MIT Lab Assistant September - December 2017
Computation Structures (6.004) *Cambridge, MA*

· Assisted students with labs, gave check-offs, helped students with quiz preparation.

PUBLICATION

Gombolay, M., **Bair, A.**, Huang, C., & Shah, J. (2017). Computational design of mixed-initiative human-robot teaming that considers human factors: situational awareness, workload, and workflow preferences. *The International Journal of Robotics Research, 36*(57), 597 − 617. https://doi.org/10.1177/0278364916688255

PRESENTATIONS

Bair, A., McDermott, M., Wang, J., Zhao, W., Sheridan, S., Szolovits, P., Kohane, I., Haggarty, S., & Perlis, R. (2018, December 3). *Improved modeling and analysis of gene expression.* Poster presented at Women in Machine Learning (WiML) Workshop, co-located with NeurIPS 2018, Montréal, Canada.

Bair, A., McDermott, M., & Szolovits, P. (2018) *Improved modeling and analysis of gene expression.* Poster presented at MIT SuperUROP Poster Session, Cambridge, Massachusetts.

AWARDS

Fulbright Predoctoral Research Grantee, Barcelona, Spain, 2019-2020

LEADERSHIP

MIT Class of 2018 Treasurer October 2014 - June 2018

· Managed and allocated a $400,000 budget over four years.
· Planned events, and study breaks to promote class unity, involvement, and well-being.

Kappa Alpha Theta Chief Recruiting Officer January 2017 - December 2017

· Organized Fall Recruitment and led 120 chapter members through preparation and recruitment weeks in the fall.
· Led several recruitment workshops to prepare members for recruitment. Topics included conversation skills, branding of the chapter, and logistical details.
· Served as a member of MIT Kappa Alpha Theta Executive board and MIT Panhellenic Recruitment Chairs Board.

SKILLS

Programming: Python, Java, C#, SQL, MATLAB, JavaScript, HTML/CSS
Languages: Spanish (Proficient)