

Matthew R. Fu

Mailing: 127 Cabot Mail Center | 60 Linnaean St | Cambridge, MA 02138 | Home: 6100 Clearview Dr | Carmel, IN 46033
(317) 617-4374 | matthewfu@college.harvard.edu | www.mattfu.org | Github: www.github.com/Matrfu

Education

HARVARD UNIVERSITY, *College*

August 2019-Present

- **AB anticipated in 2023, Computer Science, GPA:** 3.8
- **Completed Coursework:** Data Structures and Algorithms, Machine Learning, Systems Programming and Machine Organization, Abstraction and Design in Computation, Introduction to Computer Science, Linear Algebra with Proofs, Vector Calculus and Linear Algebra II, Introduction to Probability.
- **Current Coursework:** Economics and Computation, Systems Security, Introduction to Theoretical Computer Science

PARK TUDOR SCHOOL, *High School*

August 2015-May 2019

- **GPA:** 3.9 (Unweighted); 4.1 (weighted)
- **ACT:** Composite 35 (Critical Reading 36, Writing 36, Math 34, Science 33); Essay: 12 | **SAT:** 1550 (Math 800, Reading & Writing 750) | **SAT Subject Tests: Math II:** 800; **US History:** 780; **Chemistry:** 770
- **Relevant Coursework:** AP CS A, Data Structures, Bioinformatics Algorithms, Math Seminar: Graphics using Linear Algebra, Computer Science Seminar.
- **National Merit Scholarship Finalist, AP Scholar with Distinction**

Work Experience

Harvard University SEAS, *SPUDS Fellow & Research Intern - Professor David Parkes Lab*

Summer 2021-Present

- Project: Deep Reinforcement Learning in Atari Economics.
- Created and used machine learning models and algorithms for deep reinforcement learning in a multi-agent Atari environment. This research served to study mechanism design and resource allocation in a dynamic environment.

Indiana University Department of Pathology, *Research Intern - Professor George Sandusky Lab*

Summer 2018, Summer 2019

- Project: The historical Use of Malaria to Treat Patients with Neurosyphilis in Indianapolis, IN During the Early to Mid 20th Century.
- Analyzed slide data using machine learning models and algorithms to examine the use of Malaria in treating neurosyphilis patients.

Where There Be Dragons, *Market Intern, alumni ambassador*

Fall 2017-Spring 2018

- Worked with local newspaper, school, and social media to spread awareness about WTBD. Attended a weekend seminar on marketing.

Park Tudor School, *Development Intern*

Summer 2017

- Implemented a grading system for AP Computer Science A & Principles through Mimir to automate grading for those classes.

Teaching Experience

Teaching Fellow, CS50: Introduction to Computer Science, *Harvard University SEAS*.

Fall 2020, Spring 2021, Fall 2021

- Lead sections, held office hours, graded assignments, and provided individual support to students on concepts including algorithms, data structures, and software engineering using C, Python, HTML, CSS, JavaScript, and SQL.

Teaching Assistant, High School Computer Science Camp, *Park Tudor High School*

Summer 2017

Projects

- **Code Translate:** An online code translation website between Python, Java, and Javascript, built using models from TransCoder, a Facebook deep learning model.
- **Short Story Recommender:** A recommendation system using unsupervised clustering and a minimum spanning tree based on scraped user comments and like patterns to generate story recommendations.
- **AP CS A and AP CS Principles Autograder:** An autograding system made through Mimir that allowed users to upload code and receive immediate feedback in terms of code functionality.
- **Simple Attendance Tracker (CS50 Final Project):** A fully functioning attendance tracker built for a high school robotics team. Focused on tracking the hours worked on a robot, the tracker has full functionality including check-in, check-out, history, and deletes.

Research

- **Fu, M.R.** Deep Reinforcement Learning in Atari Economics. Presented at the SPUDS research talks. Cambridge, MA.
- **Fu, M. R.** Harvard University's Long-Term Income and its Connection to Slavery. 2020. Cambridge, MA.
- **Fu, M. R., Sandusky, G. E.,** A Case Study of the Historical Use of Medically Induced Malaria to Treat Neurosyphilis. To be submitted. Indianapolis, IN.
- **Fu, M. R., Moster, A., Sandusky, G. E.** Clinical Evaluation of Tertiary Syphilis Patients Treated with Malaria in 1929-1947 at Central

Newspaper Publications

- **Fu, Matthew R.** China Impressions 1: Urban and Rural. Indy Asian American Times 27 June 2018.
- **Fu, Matthew R.** China Impressions 2: Past and Present. Indy Asian American Times 13 July 2018.

Honors/Awards

- Derek Bok Center Certificate of Distinction in Teaching (Fall 2021)
- NSDA National Speech & Debate Tournament Top 60 in Extemporaneous Speaking (2019)
- IHSFA Indiana State Speech Tournament, Extemporaneous Speaking- Runner-up (2019)
- NSDA National Speech & Debate Tournament Qualifier (2018, 2019)
- Judge on the ICJ in the International Hague THIMUN (2019)
- United States National Chemistry Olympiad (USNCO) exam- Honorable Mention (2017)
- National Cyberpatriot Competition- Regional 1st (2019), 2nd place (2018), Three-time State 1st place (2017, 2018, 2019)
- Regional Scholastic Art & Writing, photography- Silver Key (2019), Eight-time Honorable Mention (2017, 2018, 2019)
- National American Computer Science League (ACSL)- Twice Honorable Mention (2017, 2018)
- Regional Purdue (ACM) Coding Competition- 1st Place (2019), 2nd Place (2018), 4th place (2017)
- National Latin Exam- Twice Maxima Cum Laude (2017, 2018)

Skills

- Proficient in Microsoft Office applications, including Excel, Word, PowerPoint, and Publisher
- Proficient in Python, Java, C, HTML, CSS, and Git.
- Proficient in Adobe Suite applications, including Photoshop, Lightroom, Bridge, Portfolio, and Acrobat
- Proficient using Aperio whole slide imaging technology and Aperio positive pixel quantitative image analysis
- Experience using Research Electronic Data Capture (REDCap)

Volunteerism

- Teaching Assistant in Computer Science Summer Camp
- 200+ service hours greeting prospective students, organizing school dances, facilitating Freshman Retreats, and supporting local library
- Photographer for gallery to assist Westminster Neighborhood Services in community outreach
- Fundraiser for Miles for Myeloma Cancer Event
- Accession of Indiana Medical History Museum instruments
- Restoring solutions to medical specimen in Indiana University

Leadership and other interests

- Created an extensive database to connect storage and places to stay with students that were kicked out from Harvard due to COVID-19.
- Harvard Ballroom Dance Team VP and Secretary (Fall 2019-now)
- Tennis Team Captain (2018), Speech Team Captain (2017-2018), Cyberpatriot Team Captain (2015-2018), Chess Club Founder (2018), Chair of New Student Services at Park Tudor (2018), Crisis Committee Chair for Park Tudor Model UN Club (2018)
- Tennis player for 7 years, Hiker, Oboe player (ISSMA Gold Medal), Photographer, Cook