Alyssa Chen

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Education

Harvard University *Cambridge, MA*

A.B./S.M. Candidate in Applied Mathematics (Neuroscience) and Computer Science *August 2018 - May 2022*

- **GPA** 3.94 (on a 4.0 scale)
- **Selected Coursework** Machine Learning (@MIT), Data Structures and Algorithms, Biological and Artificial Intelligence, Economics of Networks, Fairness and Validity in Algorithms (graduate), Group Theory, Probability, Statistical Inference, Theoretical Linear Algebra, Real Analysis, Public Speaking Practicum, Physics: Mechanics and Special Relativity
- **Publications** C. Yeo and A. Chen. "Defining and Evaluating Fair Natural Language Generation." *Proceedings of the The Fourth Widening Natural Language Processing Workshop at ACL 2020.*

The Pingry School *Basking Ridge, NJ*

Valedictorian *May 2018*

- **GPA** 4.0 (on a 4.0 scale)
- Member of the Cum Laude Society and National Merit Scholarship Recipient.
- **National AP Scholar.** Received highest score (5) on 13 AP exams. **ACT**: 36/36. **SAT**: 1590/1600.

Work and Experience

Secure AI Labs *Cambridge, MA / Remote*

Data Science Intern *May 2020 - present*

- Developed and tested an accuracy-preserving federated version of XGBoost for SAIL's secure computing platform.
- Researched methods for developing differentially private versions of common algorithms.

Cognitive Computational Neuroscience Lab @ Harvard University *Cambridge, MA*

Research Assistant *June 2019 - September 2019*

- Studied mechanisms of biological and artificial intelligence in interdepartmental project at Samuel Gershman's Lab.
- Calculated correlation in performance of 4-layer RNNs and 8 major language areas of the brain using Representational Similarity Analysis.
- Parallelized computing tasks using MATLAB, bash scripting, and cluster computing.

Harvard Vision Lab *Cambridge, MA*

Research Assistant *January 2019 - May 2019*

- Investigated performance of a pretrained VGG16 model on classification of 168 hand-drawn sketches from the TU-Berlin dataset using PyTorch.
- Modified VGG16 using transfer learning techniques (eg. fixed feature extraction) to achieve higher validation accuracy on sketches.

Extracurricular

WHRB (Harvard Radio Broadcasting) 95.3FM *Cambridge, MA*

Co-Director (since Jan 2020) and Member of Jazz Department *September 2018 - present*

- Coordinated a 3-hr historical and modern protest jazz broadcast fundraiser for BLM Boston.
- Coordinated social events and managed 40-hour weekly jazz air across more than 30 active members of the jazz department.

Harvard School of Engineering and Applied Sciences *Cambridge, MA*

Teaching Fellow *January 2020 - May 2020*

- Taught sections, held office hours, and graded student work for Michael Mitzenmacher's Data Structures and Algorithms.
- Attended weekly meetings to discuss problems and course logistics with 18-person staff team.

Skills and Interests

Programming Python (including NumPy, PyTorch, Scikit-learn), MATLAB, R, Microsoft Excel, Java, LaTeX

Technical Data structures and algorithms, Machine learning, Statistical inference, Differential privacy

Activities Women in Computer Science (WiCS), Harvard Radcliffe Orchestra (2018 - 2019), Winthrop Grille (2019)

Interests Dramatic writing, flute, voice, calligraphy and hand lettering

Languages English, Mandarin Chinese (spoken), French (proficient)