Adam Guo

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GitHub github.com/adamguos

- Junior at Pomona College from Hong Kong, majoring in computer science and mathematics
- Passionate about software, open source, Linux, and data science
- Experience in web development, machine learning research, data analysis projects

Skills

Linux/UNIX, Bash, Vagrant
Python, Tensorflow, scikit-learn, Pandas
Ruby on Rails, Node.js, Angular.js, HTML/CSS
C/C++, Julia, MATLAB, Java, Haskell

Education

2018-2022 Pomona College
Computer Science and Mathematics major, 4.0 GPA

- CS coursework: *Data Structures and OOP, Computer Systems*
- Math coursework: *Advanced Linear Algebra, Statistical Theory, Mathematics of Big Data*
- Teaching assistant for CS department (Discrete Math/Functional Programming, Languages and Theory of Computation)
- p-ai.org member working on applied ML projects, e.g. EEG classification, facial recognition

Work Experience

Sep 2018 - present Associated Students of Pomona College
Web Developer

- Developed and maintained pomonastudents.org (used by 5,000+ students) in a team of 4
- Built new features from start to finish: rideshare portal, housing review system, static page WYSIWYG editor
- Met regularly with student government to discuss wanted features, user feedback

Technologies: Ruby on Rails, jQuery, HTML/CSS, PostgreSQL, Vagrant, Capistrano

June 2019 - Sep 2020 Claremont Graduate University Institute of Mathematical Sciences
Research Assistant (under Prof. Hrushikesh Mhaskar)

- Implemented novel time series classification algorithm using kernel methods on manifolds
- Read research papers and implemented cutting edge algorithms *(ARMA parametrisation, RBF kernel on manifolds, IMF signal decomposition)*
- Achieved state-of-the-art classification accuracy in some high-dimensional datasets
- github.com/adamguos/arma-grassmann-classifier

Technologies: Python (Tensorflow, scikit-learn), MATLAB, Julia

Projects

- **Geometrically unified facial recognition (under Prof. Weiqing Gu, Harvey Mudd College)**
  - Research team, using differential geometry techniques to accelerate machine learning-based facial recognition
  - Used **OpenCV** and **dlib** to extract facial shapes
  - Used **scikit-learn** to train Gaussian mixture model to cluster shapes for recognition
- **CHIP8.jl**
  - Developed a fully functional CHIP-8 emulator in Julia
  - Graphics and input implemented using GTK
  - github.com/adamguos/chip8.jl
- **EEG decoding and classification with recurrent neural networks**
  - Classifies EEG based on executed or imagined movements, using **Tensorflow** RNN/LSTM
  - Achieved 70% accuracy across 7 classes.
  - github.com/adamguos/p-ai-neuro