

# Adam Guo

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**Email** [agsmguo@gmail.com](mailto:agsmguo@gmail.com)

- 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, JavaScript, Node.js, HTML/CSS  
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)

## Work Experience

- Sep 2018 - present** Associated Students of Pomona College  
*Web Developer*
- Developed and maintained [pomonastudents.org](http://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](https://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](https://github.com/adamguos/chip8.jl) emulator in Julia
  - Graphics and input implemented using GTK
  - [github.com/adamguos/chip8.jl](https://github.com/adamguos/chip8.jl)
- **EEG decoding and classification with recurrent neural networks**
  - Classifies EEG signals based on executed or imagined motor signals, using Keras RNN/LSTM
  - Achieved 70% accuracy across 7 classes.
  - [github.com/adamguos/p-ai-neuro](https://github.com/adamguos/p-ai-neuro)