

# Adam Guo – Résumé

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## Personal Profile

I'm Adam, a sophomore at Pomona College from Hong Kong. I am passionate about mathematics and computers, particularly how the two come together to produce fascinating and meaningful results for the real world. In particular, I'm fascinated by the mathematics and theory of machine learning, supported by my summer experience in numerical analysis research and participation in machine learning student projects. I also have experience in software development for real-world projects, especially web development.

## Education

**2018-2022** Mathematics and Computer Science major - Pomona College ('22)  
4.0 GPA  
Classes taken include Mathematics of Big Data, Advanced Linear Algebra, Data Structures.  
Treasurer of Claremont Cantonese Club, project member of P-ai.  
Teaching assistant for CS department, grader for math department.

## Projects

- **Geometrically unified facial recognition (under Prof. Weiqing Gu, Harvey Mudd College)**  
Research team using techniques from differential geometry and topological data analysis to accelerate machine learning-based facial recognition.  
Wrote models in Python to extract and train on geometric data from thousands of sample images, using state-of-the-art mathematical tools.
- **EEG decoding and classification with recurrent neural networks**  
P-ai at the Claremont Colleges project.  
Classifies EEG signals based on executed or imagined motor signals, using Keras RNN/LSTM.  
[github.com/adamguos/p-ai-neuro](https://github.com/adamguos/p-ai-neuro)

## Work Experience

**Summer 2019** Claremont Graduate University Institute of Mathematical Sciences  
*Research Assistant*  
Worked with Professor Hrushikesh Mhaskar to investigate methods of computing inverse Laplace transforms of linear combinations of point masses, with applications to medical imaging and machine learning. Implemented algorithms such as Gauss quadrature formula computations and discrete Fourier transforms based on significant papers.  
[github.com/adamguos/surp-2019](https://github.com/adamguos/surp-2019)

**Technologies:** Julia, Python, MATLAB, WolframScript.

**Sep 2018 - present** Associated Students of Pomona College  
*Web Developer*

Developed and maintained student government website (used by 5,000+ students of all Claremont colleges) in Ruby on Rails, both front-end and back-end. Implemented new features such as a rideshare portal and housing review system, based on feedback from users and student government. Helped rebuild version 2 of the website from the ground up.  
pomonastudents.org

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