

# Sarah Lau Hale

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## EDUCATION

### COLUMBIA UNIVERSITY

PHD IN COMPUTATIONAL

ASTROPHYSICS

May 2023 | New York, NY

### HARVEY MUDD COLLEGE

BS IN PHYSICS & COMPUTERS

May 2018 | Claremont, CA

High Distinction

Departmental Honors

## LINKS

LinkedIn:// [shale](#)

Github:// [shale](#)

## COURSEWORK

Artificial Intelligence

Neural Networks

Computer Systems

Data Structures and Program

Development

Computational Methods in Physics

Fourier Series and Boundary Value

Problems

## SKILLS

Machine Learning • Deep Learning

Research • Software Development

Programming Languages:

C++ • Python • Keras • Bash/shell

Java • MATLAB • Mathematica

JavaScript • HTML • CSS

## AWARDS

2018 - National Science Foundation  
GRFP Honorable Mention

2017 - Summer Undergraduate  
Research Fellow

2014 - National Merit Scholarship

2014 - Andria Erzberger Physics  
Scholarship

## EXPERIENCE

### GOOGLE | SOFTWARE ENGINEER INTERN

May 2018 – Present | Mountain View, CA

Working on the **Dynamic Search Ads' Quality** team to improve the precision and recall of the query/advertisement matching model.

### GOOGLE | ENGINEERING PRACTICUM INTERN

May 2016 – Aug 2016 | New York, NY

Facilitated addition of new sources of data to local search on **Google Maps** by creating an internal pipeline written in C++ to transform open government data for use in Maps.

### NASA | SOFTWARE ENGINEER INTERN

Jun 2015 – Aug 2015 | Mountain View, CA

Developed for **Open MCT**, a web-based data visualizer intended for mission control usage. Implemented a modular search algorithm so as to be extendable for future use cases, and designed a user interface for it and object inspection.

## RESEARCH

### LIGO | UNDERGRADUATE RESEARCH FELLOW

Jun 2017 – May 2018 | Caltech & Harvey Mudd College

Personally developed a **deep learning gravitational wave classifier** prototype which can distinguish simulated gravitational waves from transient noise with >99% accuracy. Initially funded by a Caltech Summer Undergraduate Research Fellowship, then continued as my undergraduate thesis work.

### SOUTH POLE TELESCOPE | UNDERGRADUATE RESEARCHER

Sep 2016 – May 2017 | Harvey Mudd College

Analyzed calibration data from the South Pole Telescope to ensure the telescope was sensitive enough to study the cosmic microwave background radiation.

### KAPAO | UNDERGRADUATE RESEARCHER

Sep 2015 – May 2017 | Pomona College

Developed software for the Pomona Adaptive Optics team to analyze telemetry data and choose observation targets.

## LEADERSHIP

### PRISM | MENTOR

Aug 2017 – May 2018 | Harvey Mudd College

Lead a small group of first-year Harvey Mudd students in bonding activities and events to acclimate them to the LGBTQA+ community at Mudd.

### PRISM | TREASURER

Aug 2017 – May 2018 | Harvey Mudd College

Handled budget of over \$3,000 and attended weekly administrative and event planning meetings, as well as the events planned at those meetings.

### EAST DORM | TREASURER

Jan 2016 – May 2018 | Harvey Mudd College

Handled budget of over \$4,000 and gave presentations at dorm meetings.