# Yubo Su

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## EDUCATION

### CORNELL UNIVERSITY
Ph.D. Astrophysics
Aug 2017–Present
Ithaca, NY

### CALIFORNIA INSTITUTE OF TECHNOLOGY
B.S. in Physics, Computer Science
Oct 2016–Jun 2016
Pasadena, CA | GPA: 3.74

## SKILLS

### SKILLSET
Numerical Simulation
Systems Infrastructure & Optimization
Data Management & Security

### PROGRAMMING
Javascript (Node.js) • Python • C/C++
Java • Shell • CUDA • Assembly

### TOOLS
Matlab • Mathematica • LaTeX
MongoDB • PostgreSQL
AWS (EC2, S3, etc.) • Docker
Ansible • Jenkins • Protractor
Git • Linux

### LANGUAGES
English • Chinese • French

## COURSEWORK

### COMPUTER SCIENCE
Machine Learning
GPU Programming
Networks and Economics
Relational Databases

### PHYSICS
Astrophysical Processes
Advanced Plasma Physics
Computational Physics
Introduction to Particle Physics
Introduction to Solid State Physics

### TEACHING
Differential Equations
Complex Analysis
C++ Language Workshop (1x)

## RESEARCH

### CORNELL UNIVERSITY
Graduate Research Assistant
Aug 2017–Present | Pasadena, CA

- Working with Prof. Dong Lai to explore numerically energy and angular momentum distribution by nonlinear wave breaking of internal tidal excitations in white dwarfs.
- Working with Sr. Research Associate Henrik Spoon on webpage to disseminate diagnostics for The Infrared Database of Extragalactic Observables from Spitzer, to go live at `http://ideos.astro.cornell.edu`.
- High performance computing, numerical fluid dynamics, theoretical astrophysics.

### CALIFORNIA INSTITUTE OF TECHNOLOGY
Undergraduate Research Assistant
Jan 2015–Jun 2016 | Pasadana, CA

- Worked with Prof. Sunil Golwala to quantify detectability of kinetic Sunyaev-Zel'dovich Effect with future sub-millimeter telescopes.
- Used Monte Carlo simulation to estimate nonlinear kSZ detection uncertainties due to imperfect source subtraction.
- Code at `https://github.com/yubo56/Bolocam_Source_Subtraction`.
- Signal Processing, IDL, Linux

### NASA JET PROPULSION LABORATORY
Undergraduate Research Assistant
Jun 2014–Dec 2014 | Pasadena, CA

- Worked with Dr. Paulett Liewer to generate synthetic white light images for solar phenomena simulating Solar Probe Plus (exp. 2020) view parameters.
- AGU 2014— `https://agu.confex.com/agu/fm14/webprogram/Paper18882.html`
- Raytracing, IDL, C

## EXPERIENCE

### BLEND LABS | Software Engineer
July 2016–Aug 2017 | San Francisco, CA

- Developed AWS S3 file management microservice. Implemented per-file encryption, set up load testing suite and stabilized all microservice deploys.
- Profiled and optimized test suites and app deploy by parallelizing tests, improving build caching and decreasing app size. Average speed up of 3x.
- Developed internal SDK to simplify encoding user transition business logic.
- Stabilized unit and end-to-end tests, reducing failures by 3x to 99%+ stability.
- Node.js, Angular, Mongo, Python, Docker, Shell, Ansible, AWS services

## AWARDS

### CALIFORNIA INSTITUTE OF TECHNOLOGY

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|---|---|---|
| 2016 | Best TA—Teaching Feedback | Among all Caltech Undergraduate and Graduate TAs. 22/24 students who responded gave perfect reviews in all categories. |
| 2016 | Outstanding Teaching Award | Nominated by students among teachers and TAs, selected by student body. |
| 2015 | NSF GRFP Honorable Mention | Proposed to study core-collapse supernovae gravitational waves using machine learning techinques. |