

# 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 •  $\text{\LaTeX}$   
 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

## RESEARCH

### CORNELL UNIVERSITY

GRADUATE RESEARCH ASSISTANT

Aug 2017–Present | Pasadena, CA

- Working with Prof. Dong Lai to explore numerically energy and angular momentum redistribution by nonlinear wave breaking of internal tidal excitations in white dwarfs.
- Working with Sr. Research Associate Henrik Spoon on a 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 | Pasadena, 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](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.

## AWARDS

### CALIFORNIA INSTITUTE OF TECHNOLOGY

- |      |                            |  |
|------|----------------------------|--|
| 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 techniques.                      |