# Yubo Su

ys835@cornell.edu • 770.527.2575
http://www.linkedin.com/in/yubosu • https://github.com/yubo56

## EDUCATION

### CORNELL UNIVERSITY
Ph.D. Astrophysics
Aug 2017–Present
Ithaca, NY | GPA: 4.0

### CALIFORNIA INSTITUTE OF TECHNOLOGY
B.S. in Physics, Computer Science
Oct 2012–Jun 2016
Pasadena, CA | GPA: 3.74

## SKILLS

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

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

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

### LANGUAGES
English • Chinese • French

## COURSEWORK

### PHYSICS
Astrophysical Processes
Advanced Plasma Physics
Computational Physics
Advanced Phase Transitions
Introduction to Particle Physics

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

### TEACHING
Differential Equations
Complex Analysis
C++ Language Workshop

## PUBLICATIONS

- Su, Y., & Lai, D. (2020). Dynamics of Colombo's Top: Generating Exoplanet Obliquities from Planet-Disc Interactions. *arXiv preprint arXiv:2004.14380* .
- Su, Y., Lecoanet, D., & Lai, D. (2020). Physics of Tidal Dissipation in Early-Type Stars and White Dwarfs: Hydrodynamical Simulations of Internal Gravity Wave Breaking in Stellar Envelopes. *Monthly Notices of the Royal Astronomical Society* .
- Dong, J. et al (2019). Glass phenomenology in the hard matrix model. *arXiv preprint arXiv:1912.07558* .

## 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.
- Also working with Prof. Dong Lai in investigating the role of secular resonances in shaping exoplanet systems via analytical and numerical calculations.
- *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* .

## EXPERIENCE

### BLEND LABS | Software Engineer
July 2016–Present | 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* .

## SELECT AWARDS

### CORNELL UNIVERSITY

| | | |
|---|---|---|
| 2019–22 | NASA FINESST | One of 21/188 funded graduate students nationwide in the astrophysics category. |
| 2020 | Citadel Data Open Championship | 3rd place team. |
| 2019 | Cornell Datathon | 2nd place team. |