

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

PROGRAMMING

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

SKILLSET

Numerical Simulation
 Systems Infrastructure &
 Optimization
 Data Management & Security

TOOLS

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

LANGUAGES

English • Chinese • French

COURSEWORK

PHYSICS

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

COMPUTER SCIENCE

Machine Learning
 GPU Programming
 Networks and Economics
 Relational Databases

TEACHING

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

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 services

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 | 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.
- 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

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 techniques. |