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 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
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

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* .

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 | 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* .

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 techinques.