

Yubo Su

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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., Liu, B., & Lai, D. (2020). Spin-Orbit Misalignments in Tertiary-Induced Black-Hole Binary Mergers: Theoretical Analysis. *arXiv preprint arXiv:2010.11951*.
- Su, Y., & Lai, D. (2020). Dynamics of Colombo's Top: Generating Exoplanet Obliquities from Planet-Disc Interactions. *The Astrophysical Journal*.
- 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*.

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 | 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*.

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*.

AWARDS

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|---------|--------------------------------|---|
| 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 | Citadel Cornell Datathon | 2nd place team. |