

# Heramba (Hebu) Patil

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## Education

### California Institute of Technology

Pasadena, CA

*B.S Applied and Computational Mathematics, Minor: Computer Science*

Sept 2023 | June 2027

Activities: NCAA D3 Men's Water Polo, Poker Club, Student Investment Fund, Quant Club

Relevant Coursework: Applied Linear Algebra, Complex Analysis, Data Structures and Algorithms, Discrete Math, Learning Systems, Machine Learning, ODEs and PDEs, Probability and Statistics

## Experience

### Caltech: RAPID ML

Pasadena, CA

*Machine Learning Researcher*

April 2024 | Present

Selected as Taylor Lawrence SURF Research Fellow. Leveraging deep learning for artifact detection, transient source identification, and celestial event classification on the NASA Nancy Grace Roman Telescope. Responsible for creating an autoencoder network using TensorFlow into one pipeline unique to Roman. Mentored by Dr. Ashish Mahabal and Roberta Paladini as part of RAPID (Roman Alerts Promptly from Image Differencing) team at IPAC, working with NASA, NSF, and JPL. Presenting at 245th American Astronomical Society (AAS) Meeting.

### University of Washington: EPE ATLAS Experiment

Seattle, WA

*Student Researcher*

June 2022 | June 2023

Researched particle physics to identify semi-visible jets containing dark matter from standard model jets in proton-proton collisions recorded from CERN collider experiments. Developed a boosted decision tree machine learning model using PyTorch and XGBoost. Work conducted in the Nobel Prize winning EPE (Elementary Particle Experiment) group under Dr. Shih-Chieh Hsu. Presented research at the UW EPE Symposium.

### University of Washington: Sauro Lab

Seattle, WA

*Student Intern*

July 2022 | Feb 2023

Built parameter scanning Python API to enhance modelling biochemical simulations. This novel API was integrated in the broadly used Tellurium biochemical analysis library. Work conducted under guidance from Dr. Herbert Sauro in the Sauro Lab.

### Codeigy

Bellevue, WA

*Founder*

June 2020 | June 2023

Founded non-profit that provides free of cost online programming bootcamps around the world in a variety of subjects including competitive programming, object-oriented programming, web development, and more. Amassed over 300 students across 12 countries in more than 30 workshops at <http://codeigy.org>.

## Skills

**Programming Languages:** Python, C++, MATLAB, Java

**Tools/Frameworks:** PyTorch, TensorFlow, Mathematica, Git

## Honors

DE Shaw NYC Connect Fellow, *DE Shaw*

Sept 2024

Citadel Summer Invitational Datathon Selectee, *Citadel*

Aug 2024

SCIAC All-Academic Team, *Southern California Intercollegiate Conference*

June 2024

Taylor Lawrence SURF Research Fellow, *Caltech*

May 2024

Jump Trading - DRW Poker Tournament, **Top 15**, *Caltech*

Feb 2024

Jane Street Estimathon, **4th Place**, *Caltech*

Feb 2024

USACO Gold, *United States Computing Olympiad*

Dec 2022

IB Diploma Recipient, *International Baccalaureate*

July 2022

USAWP Outstanding Academic All-American, *USA Water Polo*

2020-22

3 time outstanding distinction.

Science Olympiad State Medalist, *Science Olympiad*

2020-22

5 time medalist. Events: Thermodynamics, Experimental Design, Dynamic Planet