

Vishruth Bharath

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EDUCATION

University of California, Santa Cruz

B.S. Computer Science (GPA: 3.84/4.0) | Dean's Honors List (Top 5%)

Santa Cruz, CA

Expected June 2025

Selected Coursework: Vector Calculus, Discrete Mathematics, Linear Algebra, Differential Equations, Programming Abstractions (Data Structures and Algorithms), Computer Architecture and Assembly Language, Computer Systems and C Programming, Structure and Interpretation of Computer Programs

EXPERIENCE

Tech4Good Lab

Undergraduate Research Lead (Advisor: Prof. David Lee)

Santa Cruz, CA

March 2023 – Present

- Build economic simulations with 25+ self-learning agents using TensorFlow and Ray to model complex human behaviors
- Design and deploy Kubernetes clusters on Minikube through Docker, leveraging spot instances to run 10+ experiments in parallel for 12 other team members, cutting resource costs by 45%
- Create frameworks built on HPC infrastructure for systematic evaluation of incentives in simulations, evaluating 150+ configurations
- Collaborate with two multidisciplinary teams to extend Salesforce's AI-Economist foundation model, with 1k+ stars on GitHub and 200+ forks enabling further research

Computer Vision Lab (UC Santa Cruz)

Research Assistant (Advisors: Prof. Roberto Manduchi, Seongsil Heo)

Santa Cruz, CA

Aug 2023 – Oct 2023

- Developed novel CNN architectures in PyTorch, reducing eye tracking estimation error by 20% on benchmark datasets
- Scaled data pipelines with Dask, Geocence, and NumPy to handle 50k+ images using Dask, slashing training and deployment times by 40%
- Worked towards publishing papers on estimation techniques for data-driven assistive technologies and presenting work at top computer vision and machine learning conferences

PROJECTS & FREELANCE

Dermahub [Labs] | ML-based Dermatology Diagnosis & Prognosis Tool

Stack: Python, Flask, MATLAB

- Implemented Random Forest and InceptionResNetV2 models for real-time skin disease classification and progression analysis
- Combined MATLAB with deep learning for precise disease spread forecasting, employing semantic and onion ring segmentation techniques
- Presented and selected among winners at PennApps '23 with a seamless Flask-based user interface coupled with Metaphor's API for enhanced medical data relaying.

Server Log Analyzer | Tool to Detect Anomalies and Patterns in Server Logs

Stack: Python

- Engineered log parser in Python to extract insights from 1TB+ of web server logs
- Optimized Pandas data pipelines to parse gigabytes of log data in minutes, a 5x increase in efficiency
- Detected errors, traffic anomalies, and security events by analyzing log patterns, enabling faster incident response

Juggernaut | Self-Learning Tower Defense Game Algorithm

Stack: Python

- Built an optimized simulation algorithm to run 11k+ game iterations for hyperparameter tuning
- Ranked in top 10% in Correlation: One and Citadel's Summer Invitational Terminal algorithmic coding competition in head-to-head matches

Informatics Olympiads & Competitive Programming

June 2020 – Present

- USA Computing Olympiad Gold Contestant (2020)
- Google Code Jam Round 1B Competitor, placing in the top 2% of 96,000 competitors globally

TECHNICAL SKILLS

Selected Languages: Python, C, C++, Java, Golang, TypeScript, MySQL, x86 Assembly, MatLab

Selected Tools and Technologies: PyTorch, Pandas, Flask, Django, OpenCV, Scikit-Learn, Tensorflow, Docker, IntelliJ, Kubernetes, Linux/Unix, Git, GCP, AWS