Laasya M. Koduru

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Education

University of California, Santa Barbara — Santa Barbara, California
Doctor of Philosophy (Ph.D.), Computer Science — Sept 2024–June 2029

University of California, Santa Barbara — Santa Barbara, California
Master of Science (M.S.), Computer Science — Sept 2023–Present

- Research focus on Applications of ML in Internet Broadband

University of California, Santa Cruz — Santa Cruz, California
Bachelor of Science (B.S.), Applied Mathematics — Sept 2020–June 2023

Monta Vista High School — Cupertino, California
High School — 2016-2020

Research Interests

My research is focused on enabling data-driven policymaking to achieve universal access to high-quality and affordable broadband networks. Currently, I am leading the development of an AI-based querying system that mimics human interactions with ISPs' web portals to scale up data collection efficiently.

Publications

1. H. Manda, V.Srinivasavaradhan, **L. Koduru**, K. Zhang, X. Zhou, U. Paul, E. Belding, A. Gupta, T. Narechania,"Assessing the Efficacy of the Connect America Fund in Addressing Internet Access Inequities in the US", Proceedings of the ACM SIGCOMM 2024 Conference.

Honors

- Summa Cum Laude, University of California Santa Cruz — 2023
- Applied Mathematics Departmental Highest Honors, University of California Santa Cruz — 2023
- Dean's Honors List, University of California Santa Cruz — 2020–2023

Work Experience

University of California Santa Cruz, Baskin School of Engineering
Peer Advisor — June 2022-Sept 2022

- Helped Engineering students plan out degree requirements to complete coursework and navigate various campus resources.
- Served as the liaison between engineering department faculty and engineering staff advisors.
- Answered 20+ phone calls from prospective parents/students, and in-person advising questions from 100+ students each week.
- Organized over 5000+ Engineering student records including major declarations/appeals, progress checks, and interdepartmental major changes.

University of California Santa Cruz, Academic Excellence Program (ACE)
Co-Leader/Peer Mentor — Sept 2021-June 2023

- Co-led 40 Calculus ACE Problem Solving sessions with Learning Skills Advisor, led collaboration activities with 30 undergraduate students on Calculus.
- Led 70 peer mentoring sessions with individual sessions of 5 students each, targeting focused review of Calculus content; increased student academic performance in Calculus courses by over 80%.

Research Experience

University of California, Santa Barbara — Santa Barbara, California
Student Researcher, Systems and Networking Lab (SNL) — Sept 2023-Present

- Used Python to automate user interactions of websites, by parsing HTML to gather public data. Adapted tool for web-scraping publicly available data using a scalable docker system with Selenium to include coverage for different internet service providers. Languages used: Python.
- Extracted/analyzed meaningful information about internet equity from different internet service providers.

University of California, Santa Cruz — Santa Cruz, California
Undergraduate Researcher, Tech4Good Lab AI-Economist Team — Sept 2022-June 2023

- Used machine learning and reinforcement learning to model apprenticeship learning dynamics. Optimized the multi-agent case by over 50% while ensuring agent behavior matched predicted behavior.
- Trained single-agent case to have over a 90% accuracy rate when matching agent behavior with expected behavior. Languages used: Python.

Projects

- CodeInsight (Java) — March 2024
  A LLM tool that leverages GPT and Microsoft's Visual Studio Code Debugger for Java extension to help individuals answer "why" questions about a program output.
- PokePortal (Ruby, React, JavaScript, HTML, CSS) — Nov 2023–Dec 2023
  Social gaming web service tool that offers seamless battle scheduling for users to challenge friends, view real-time Pokemon World news, and create posts/comments related to Pokemon.
- Recommendation System (Python) — April 2023–June 2023
  Movie recommendation system developed with Pearson correlation and a user-user similarity matrix that generates movie recommendations for users leveraging their past rated movies, submission date, and movie genre.

Technical Skills

- **Programming:** Python, C/C++, HTML, CSS, React, R, Java
- **Machine Learning:** Pandas, NumPy, Matplotlib, Tensorflow, Keras
- **Tools/Frameworks:** LATEX, Jupyter Lab, Git, AWS EC2, Matlab, Microsoft Office

Selected Classes

- Machine Learning for Networked Systems, Trustworthy Machine Learning in Security, CyberSecurity Hacking, Software Engineering, Scalable Internet Services, Advanced Topics in Computer Vision, Advanced Augmented/Virtual Reality Human Computer Interaction