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

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. I have been working with the broadband-plan querying tool (BQT), which extracts detailed information on broadband availability, quality (such as upload/download speed and latency), and affordability for any given street address. I am currently leading the development of an Machine Learning-based querying system that maps ISP page elements while the system logs human interactions with the website in order to scale up data collection for diverse ISPs in the US, and collecting longitudinal data.

Publications

1. Haarika Manda, Varshika Srinivasavaradhan, **Laasya Koduru**, Kevin Zhang, Xuanhe Zhou, Udit Paul, Elizabeth Belding, Arpit Gupta, and Tejas Narechania. Assessing the Efficacy of the Connect America Fund in Addressing Internet Access Inequities in the US, Proceedings of the ACM SIGCOMM 2024 Conference.

2. Haarika Manda, Varshika Srinivasavaradhan, **Laasya Koduru**, Kevin Zhang, Xuanhe Zhou, Udit Paul, Elizabeth Belding, Arpit Gupta, and Tejas Narechania. Measuring Broadband Policy Success. In Harvard Law Review Blog, 2024.

Honors/Awards

- University of California Santa Barbara Computer Science Summer Fellowship — 2024
- 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
- Advanced Placement (AP) Scholar with Honor — 2019
- National Merit Scholarship Qualifying Test (NMSQT) Commended Scholar — 2019

Work Experience

University of California Santa Cruz, Baskin School of Engineering

Peer Advisor — June 2022-Sept 2023

- 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), MOMENT Lab — 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
- In Progress: Advanced Topics in Security