Sagar Patel

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Education

2020 – Present	**University of California, Irvine** Ph.D. Candidate Computer Science Advisor: Sangeetha Abdu Jyothi
2020 – 2022	**University of California, Irvine** M.S. Computer Science
2017 – 2020	**Texas A&M University** B.S. Computer Science, magna cum laude, undergraduate research scholar

Publications

- **S. Patel**, S. Abdu Jyothi, and N. Narodytska, "Crystalbox: Future-based explanations for input-driven deep rl systems," *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 38, no. 13, pp. 14 563–14 571, Mar. 2024. 🔗 DOI: `10.1609/aaai.v38i13.29372`.

- **S. Patel**, S. Abdu Jyothi, and N. Narodytska, "Towards future-based explanations for deep rl network controllers," *SIGMETRICS Perform. Eval. Rev.*, vol. 51, no. 2, pp. 100–102, Oct. 2023, ISSN: 0163-5999. 🔗 DOI: `10.1145/3626570.3626607`.

- **S. Patel**, J. Zhang, S. A. Jyothi, and N. Narodytska, *Plume: A framework for high performance deep rl network controllers via prioritized trace sampling*, 2023. arXiv: `2302.12403 [cs.LG]`.

Research Experience

Sep 2020 – Present	**Research Assistant**. University of California, Irvine. Supervisor: Sangeetha Abdu Jyothi Prioritized Trace Sampling. Proposed a novel framework for unlocking high performance deep RL network controllers by adaptively selecting the simulation network traces.
Jun 2022 – Sep 2022	**Research Intern**. VMware Research, Palo Alto. Supervisor: Nina Narodytska CrystalBox. Introduced a new perspective for explaining DRL controllers: a view into the controller's decision making process through decomposed future rewards.
Jan 2018 – May 2018	**Undergraduate Researcher**. Texas A&M University, College Station. Supervisor: Scott Kolodziej Experimental Assessment of Software Engineering Practices. Designed and conducted a human trial assessing the comprehension and efficiency of various coding practices through the Aggie Research Scholars program.

Industry Experience

Jun 2023 – Sep 2023	**VMware Research, Palo Alto** Research Intern. Mentor: Nina Narodytska

Jun 2022 – Sep 2022   **VMware Research, Palo Alto**
Research Intern. Mentor: Nina Narodytska

Teaching Experience

Teaching Assistant, University of California, Irvine

Spring 2024   CompSci 201P: Computer Security
Graduate Course of 60+ students. Conducted weekly labs and office hours for practical assignments exploiting vulnerabilities in web and low-level programs.

Spring 2023   ICS 32: Programming Software Libraries (Python)
Undergraduate Course of 250+ students. Conducted bi-weekly labs for help in practically applying libraries to assignments. Helped design and implement exams, programming assignments, and grading material.

Fall 2022   CS 256: Systems and Machine Learning
Graduate Course of 50 students. Guided students through their advanced readings and projects.

Summer 2021   ICS 32: Programming Software Libraries (Python)
Undergraduate Course of 50 students. Administered weekly help for programming assignments. Incorporated PEP 287 and Google documentation practices into course materials and assignments.

Spring 2021   ICS 45C: Program in C/C++
Undergraduate Course of 200+ students. Managed open labs for help in course material and programming assignments.

Winter 2021   ICS 45C: Program in C/C++
Undergraduate Course of 200+ students. Arranged weekly office hours for help with programming assignments. Created file-handling assignment and implemented its automated grading system.

Fall 2020   ICS 32: Programming Software Libraries (Python)
Undergraduate Course of 80 students. Scheduled weekly academic support time for one-on-one help.

Peer Teacher, Texas A&M University

Fall 2019   CSCE 121: Introduction to Program Design and Concepts (C++)
Undergraduate Course of 30 students. Assisted with lectures and coding exercises. Held weekly programming help desk for entry-level courses.

CSCE 206: Structured Programming in C
Undergraduate Course of 20 students. Led weekly labs to reinforce lecture concepts.

Mentoring Experience

Sep 2023 – Present   Mengjie Xie (B.S. UCI)
Currently mentoring research on interpreting deep RL controllers.

Jun 2022 – Feb 2023   Junyang Zhang (B.S. UCI → M.S. Caltech)
Mentored research on high performance deep RL network controllers. Second author on a paper under submission.

Jun 2021 – Jun 2022   Haining Zhou (B.S. UCI → M.S. UC Berkeley)
Mentored research on practically deploying deep RL controllers on the internet.

Mentoring Experience (continued)

Jun 2021 – Aug 2021   Chinmay Tyagi (B.S. UCI → Microsoft)
    Mentored research on Adaptive Bitrate Streaming for 3D volumetric videos and livestreams.

    Niva Ranavat (B.S. UCI → Amazon)
    Mentored research on empirical analysis of state-of-the-art solutions for Reinforcement Learning in the networking domain.

Miscellaneous Experience

Invited Talks

Aug 2023   **SIGMETRICS Workshop** on Measurements for Self-Driving Networks
    Towards Future-Based Explanations for DRL Controllers

Honors and Awards

Oct 2023   Invited to the Google Networking Research Summit, Mountain View

Jan 2020   Industrial Affiliates Program Scholarship

Service

Jan 2024 – Present   **Webchair**. ACM HotNets 2024.

Oct 2023 – Present   **Title I Mentor**. Venado Middle School, Irvine Unified School District.

Jan 2023 – Jun 2023   **Mentor**. Save Our Youth, Costa Mesa, California.

Aug 2020 – Present   **English Tutor**. ENGin Program, Ukraine.

Aug 2020 – Dec 2020   **Intermediate ESL Instructor**. Memorial Assistance Ministries, Houston.

References

Available on Request