

# Harini Venkatesan

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University of California, Riverside  
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| EDUCATION           | <b>University of California, Riverside</b><br>Ph.D. in Computer Science<br><i>Advisor:</i> Dr. Christian Shelton                                                                                                                                                                                                                                                                                                                                                                                                                    | Riverside, CA<br>Expected June 2027 |
|                     | <b>University of California, Riverside</b><br>B.S. in Computer Science                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Riverside, CA<br>June 2020          |
| TEACHING INTERESTS  | Introductory and data-science-oriented programming; machine learning and data mining; object-oriented programming; computational statistics. Prepared to teach lower- and upper-division courses to both majors and non-majors, and to develop new electives in machine learning, probabilistic modeling and statistical computing.                                                                                                                                                                                                 |                                     |
| TEACHING EXPERIENCE | <b>Associate Instructor (Instructor of Record)</b><br>University of California, Riverside — Computer Science and Engineering                                                                                                                                                                                                                                                                                                                                                                                                        | Sept. 2023 – June 2026              |
|                     | <ul style="list-style-type: none"><li>• Served as primary instructor of record for lecture courses enrolling more than 100 students, meeting three times weekly.</li><li>• Designed and edited course materials, assignments, and exams.</li><li>• Used student performance data to revise lectures and assessments across successive offerings.</li><li>• Trained and supervised a team of teaching assistants and graders each quarter.</li><li>• Held regular office hours and collaborative problem-solving sessions.</li></ul> |                                     |
|                     | <b>Teaching Assistant</b><br>University of California, Riverside — Computer Science and Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                 | Aug. 2021 – Present                 |
|                     | <ul style="list-style-type: none"><li>• Led weekly discussion sections and lab sessions across multiple course offerings.</li><li>• Developed and graded assignments and exams, providing detailed written feedback.</li><li>• Held regular office hours, with emphasis on supporting students needing additional help.</li></ul>                                                                                                                                                                                                   |                                     |
| AWARDS AND HONORS   | <ul style="list-style-type: none"><li>• <b>Honorable Mention</b>, Graduate Student/Postdoctoral Instructor of Record Award, UC Riverside Academy of Distinguished Teaching</li></ul>                                                                                                                                                                                                                                                                                                                                                | May 2026                            |
| COURSES TAUGHT      | <b>Instructor of Record:</b> 100+ students per offering                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |
|                     | <ul style="list-style-type: none"><li>• <b>CS 006: Effective Use of World Wide Web</b> — non-engineering majors; HTML/CSS, web tools, generative AI, privacy, security, and social context.<br/><i>Fall 2025, Winter 2026, Spring 2026</i></li><li>• <b>CS 009A: Data-Oriented Introduction to Computing</b> — data science and engineering majors, Python programming, NumPy, PyTorch.<br/><i>Fall 2023</i></li></ul>                                                                                                              |                                     |
|                     | <b>Teaching Assistant:</b> 250+ students per offering                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |
|                     | <ul style="list-style-type: none"><li>• <b>CS 171: Machine Learning and Data Mining</b> — upper-division CS; classification, regression, clustering, data mining.<br/><i>Spring 2022, Winter 2023, Spring 2025</i></li><li>• <b>CS 010B: Introduction to Object-Oriented Programming</b> — lower-division CS; C++, recursion, pointers, linked lists, OO design.<br/><i>Fall 2021, Winter 2022</i></li></ul>                                                                                                                        |                                     |

## PUBLICATIONS AND TALKS

- H. Venkatesan, C. Shelton, M. Ho, S. Bird, and M. Wu. “FLARE MCMC: Fidelity-Based Layer-Adaptive Recursive Proposals for MCMC.” *SIAM/ASA Journal on Uncertainty Quantification*, 14(2):661–690, 2026.
- “Shrek MCMC: A Multi-Fidelity Layered MCMC Approach.” Colloquium, Center for Research in Intelligent Systems (CRIS). *November 2023*
- H. Sang, H. Venkatesan, C. Shelton, S. Bird, H. Garca Escudero “SPIFFY-MCMC: Speed-Partitioned Inference with Fidelity laYers for MCMC.” Under Review at *AAAI*, 2026.

## RESEARCH EXPERIENCE

**Graduate Research Assistant** Sept. 2020 – Present  
University of California, Riverside — Advisor: Dr. Christian Shelton

- Developed a multi-fidelity extension of Markov chain Monte Carlo that uses inexpensive model approximations to sample efficiently from computationally expensive targets.
- Established convergence properties and rates through theoretical analysis of adaptation ergodicity.
- Collaborated with astronomers and statisticians through the Lyman Alpha Research Collaboration (LARC), a cross-institutional effort spanning USC, UC Riverside, and Carnegie Observatories, adapting inference methods to astrophysical simulations.
- Mentored an undergraduate researcher through theory, algorithm design, and experimental evaluation.

**Undergraduate Research Assistant** Mar. 2018 – Mar. 2020  
University of California, Riverside — Advisor: Dr. Mariam Salloum

- Investigated methods for identifying flood and hurricane affected regions from JPL UAVSAR data.

## RESEARCH MENTORING

- **M. Wu**, undergraduate researcher, UC Riverside *2024-2025*  
Mentored through theory, algorithm design, and experimental evaluation; co-author on “FLARE MCMC” (*SIAM/ASA JUQ*, 2026).

## SERVICE AND LEADERSHIP

**Director**, Rose Hack Jan. 2019 – Feb. 2020

- Directed one of the first women-centered hackathons in Southern California, supervising all committee chairs and members.
- Raised and managed a budget of \$14,000 in cash and approximately \$40,000 in in-kind sponsorship.
- Built sponsor and community partnerships and set fundraising, marketing, and operational strategy.

**Graduate Advisor**, ACM Women in Computing Mar. 2021 – Mar. 2022

- Organized events for graduate and undergraduate students and advised undergraduate board members on operations.

**Technical Student Assistant**, UC Riverside Extension Jan. 2019 – Mar. 2020

- Maintained and scheduled language technology labs; managed student enrollment and registration records.