SAM WILLIAMS

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EDUCATION

University of Southern California   **Aug. 2022 – Current**
Doctor of Philosophy in Computer Science
GPA: 4.0 / 4.0

University of Colorado Boulder   **Aug. 2018 – May 2022**
Bachelor of Science in Computer Science   **Summa cum laude, with Honors**
GPA: 4.0 / 4.0

Awards & Honors: Chancellor's Recognition Award, Mackison Writing Award, Wozniak Scholarship.

RESEARCH

Graduate Research Assistant   **Aug. 2022 – Current**
University of Southern California
- Game-theoretic models of autonomous intersections.
- Potential games on cubic splines for multi-agent motion planning of autonomous agents.
- Integrating potential games with temporal logic to synthesize trajectories of multi-agent systems.

Undergraduate Volunteer   **Feb. 2021 – May 2022**
University of Colorado Boulder
- Software improvements to an agile autonomous vehicle.
- Volunteered under the supervision of a Ph.D. student in the ARPG research group.

PROFESSIONAL EXPERIENCE

Scientific Software Developer Intern   **May 2021 – Aug. 2021**
Stellar Science
- Created code to compute intersections between simple geometric shapes for a satellite simulator.
- Added a GUI and visualization to compute and view resulting intersections in a user-friendly manner.

Scientific Software Developer Intern   **May 2020 – Aug. 2020**
Stellar Science
- Constructed a general-purpose C++ Web Framework used in multiple applications.
- Built an asynchronous, multithreaded, high performant HTTP/1.1 server in C++17 using Boost.Beast and Boost.Asio with careful consideration to the HTTP RFC specification to replace a deprecated library.

Undergraduate Software Developer Intern   **May 2019 – Aug. 2019**
Terumo BCT
- Customized the operating system for an i.MX8 board using Yocto and implemented an NFS boot environment complete with U-Boot scripts for easy developer integration.
- Investigated the feasibility of attaching an additional board without storage used for streaming video to one of their medical devices.

TEACHING

University of Southern California
    Teaching Assistant CSCI 513: Autonomous Cyber-Physical Systems   **Fall 2023**
University of Colorado Boulder
    Course Assistant CSCI 2820: Linear Algebra with Computer Science Applications   **Spring 2022**
    Course Assistant CSCI 3434: Theory of Computation   **Fall 2021**

PUBLICATIONS

Conference Publications   **AAMAS 2024**

- **Williams, S.**, Deshmukh, J. (2024, May). Potential Games on Cubic Splines for Multi-Agent Motion Planning of Autonomous Agents: Extended Abstract. In *Proceedings of the 23rd International Conference on Autonomous Agents and Multiagent Systems*

PRESENTATIONS

Conference Presentations

- **Williams, S.**, Deshmukh, J. (2024, Mar). Potential Games on Cubic Splines for Multi-Agent Motion Planning.   **IOS 2024**
- Adimoolam, A., Saha, I., & Dang, T. (2023, May). Safe Self-Triggered Control Based on Precomputed Reachability Sequences. In *Proceedings of the 26th ACM International Conference on Hybrid Systems: Computation and Control* (pp. 1-12).   **HSCC 2023**

Poster Presentations

- Paul, S., **Williams, S.,** Deshmukh, J. (2023, Oct). Game Theoretic Methods for Planning. Poster session presented at USC Center for Autonomy and AI Fall 2023 Workshop

SERVICE

Software Seminar Host   **Spring 2023**
        Fall 2023
        Spring 2024

- Organized and hosted a weekly seminar at USC where PhD students present their ongoing research.
- Typically attended by an audience of 20-30 graduate students and professors affiliated with software engineering research.

Reviewer

- ICRA 2024

Sub-Reviewer

- HSCC 2024
- VMCAI 2024
- ACC 2023
- CAV 2023
- CDC 2023