SPENCER VAN KOEVERING

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EDUCATION

Cornell University *2023-2029 (expected)*
Ph.D Computer Science
Advised by Alexandra Silva

Whitman College *2017-2021*
B.A. in Computer Science with Honors
B.A. in Mathematics with Honors
Minor in Philosophy
Minor in Biology
Graduated Summa Cum Laude Overall GPA: 3.9

PUBLICATIONS

[1] Spencer Van Koevering, Yiwei Lyu, Wenhao Luo, and John Dolan. Provable probabilistic safety and feasibility-assured control for autonomous vehicles using exponential control barrier functions, 2022. *Used control barrier functions to offer a probabilistically guarantee safety in high-relative-degree systems with unbounded uncertainty. Offered a pointwise guarantee of feasibility of the safe controller so no safe inputs were excluded from the set of safe inputs.*

[2] Spencer Van Koevering, Wojciech Różowski, and Alexandra Silva. SemiGKAT: Weighted programming with an equational framework (pending), 2024. *Created a semiring weighted version of GKAT. Language is shown to be sound, complete, and decidable. We also offer a class of semirings which is semantically appropriate for weighted computation.*

FELLOWSHIPS

1. Logic in Computing Systems Logic Mentoring Workshop Student Attendee Grant 2024
2. Bowers CIS Deans Excellence Fellowship 2023-present
3. Alexander J. Anderson Merit Scholarship 2017-2021
4. National Merit Scholar 2017-2021

AWARDS

1. Graduated Summa Cum Laude from Whitman College 2021
2. Graduated with Honors in Computer Science 2021
3. Graduated with Honors in Mathematics 2021

CONFERENCES AND TALKS

Provable Probabilistic Safety and Feasibility-Assured Control for Autonomous Vehicles using Exponential Control Barrier Functions June 2022
IEEE Intelligent Vehicles Symposium *Aachen, Germany*

EXPERIENCE

Amazon May 2022 - June 2023
Software Development Engineer *Seattle, WA*

- Developed frontend and backend code for the home page on kindle ereaders as well as iOS and Android apps

Carnegie Mellon University Robotics Institute September 2021 - May 2022
Research Assistant

- Worked on control barrier functions for automated vehicles and simulated my safe controller in a variety of traffic scenarios

Carnegie Mellon University Robotics Institute May 2021 - September 2021
NSF REU Scholar

- Worked on an REU project about applying control barrier functions in high-relative-degree systems with uncertainty

Amazon June 2020 - November 2020
Software Development Engineer Intern *Seattle, WA*

- Developed synchonization features for kindle iOS/Android apps

Fred Hutchinson Cancer Research Center June 2019 - September 2019
Research Assistant Intern *Seattle, WA*

- Worked as a genomics research assistant analyzing trascriptomes

SERVICE

Cornell University 2024-
Research Night Speaker *Ithaca, NY*

- Presented research and recruited undergraduate students

Whitman College 2023-
Graduate Student Mentor

- Mentored CS undergraduate students applying for internships, industry jobs and graduate school

Woodland Park Zoo 2014 - 2017
Volunteer *Seattle, WA*

- Worked as a docent and supervised other volunteers

LANGUAGES

1. Python
2. Java
3. c++
4. Matlab
5. Javascript/HTML/CSS
6. SQL