

Elizabeth Dietrich

University of California, Berkeley

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Position

University of California, Berkeley

GRADUATE STUDENT RESEARCHER

Electrical Engineering and Computer Sciences

Berkeley, USA

08/2023 – Today

Interests

Methods

reachability analysis · formal methods · data-driven control

Topics

autonomous systems · control theory · statistical learning

Education

University of California, Berkeley

PHD IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCES

Advisor: Murat Arcak

Berkeley, CA, USA

08/2023 – Today

Indiana University, Bloomington

B.S. IN COMPUTER SCIENCE, MINOR IN MATHEMATICS

Thesis: A beginner's guide to Iris, Coq and separation logic, Advisor: Dennis Shasha

Bloomington, IN, USA

08/2017 – 05/2021

Visits

Norwegian University of Science and Technology (NTNU)

VISITING RESEARCHER

MC Lab (Asgeir J Sørensen and Roger Skjetne)

Trondheim, Norway

06/2025 – Today

Norwegian University of Science and Technology (NTNU)

VISITING RESEARCHER

MC Lab (Asgeir J Sørensen)

Trondheim, Norway

05/2024 – 07/2024

Publications

* first author(s)

PREPRINTS

Elizabeth Dietrich*, Hanna Krasowski*, Emir Cem Gezer, Roger Skjetne, Asgeir Johan Sørensen, and Murat Arcak. *pacSTL: PAC-Bounded Signal Temporal Logic from Data-Driven Reachability Analysis*. 2025

CONFERENCE PAPERS

Elizabeth Dietrich*, Rosalyn Devonport, Stephen Tu, and Murat Arcak. “Data-Driven Reachability with Scenario Optimization and the Holdout Method”. In: *Accepted for Proc. of the IEEE Conference on Decision and Control (CDC)*. 2025

Elizabeth Dietrich*, Emir Cem Gezer*, Bingzhuo Zhong, Murat Arcak, Majid Zamani, Roger Skjetne, and Asgeir Johan Sørensen. “Symbolic Control for Autonomous Docking of Marine Surface Vessels”. In: *Accepted for Proc. of the IEEE Conference on Decision and Control (CDC)*. 2025

Elizabeth Dietrich*, Alex Devonport, and Murat Arcak. “Nonconvex scenario optimization for data-driven reachability”. In: *Proceedings of the 6th Annual Learning for Dynamics amp; Control Conference*. Vol. 242. Proceedings of Machine Learning Research. PMLR, 15–17 Jul 2024, pp. 514–527

Invited Talks

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| 2025 | NSF Frontier Review, UC Berkeley · SFI Autoship Review, NTNU · Marine Cybernetics Seminar, NTNU · ANSR Seminar, UC Berkeley, online |
| 2022 | Informatics, Computing, and Engineering Seminar, IUB · Intelligent Systems Symposium, Johns Hopkins University APL |

Mentoring

STUDENT PROJECTS

- 2025- Athul Krishnan & Chloe Yejin Lynn UCB
NSF IRES Project on Autonomous Marine Operations for the Arctic

Professional Experience

- 08/2021 – 07/2023 **Associate Staff: Research Scientist** · Johns Hopkins University Applied Physics Laboratory
05/2020 – 08/2021 **Undergraduate Research Assistant** · New York University, Courant Institute
05/2019 – 08/2019 **Software Engineer Intern** · Amazon

Teaching Experience

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| Spring 2025 | Optimization of Engineering Systems (MAS-E 238C) , Graduate Teaching Assistant (online) |
| Fall 2024 | Analysis and Control of Nonlinear Systems (MAS-E 250A) , Graduate Teaching Assistant (online) |
| Spring 2022 | MATLAB II , STEM Academy Instructor JHUAPL |
| Fall 2018 & 2019 | Introduction to Computer Science (CSCI-C211) , Undergraduate Teaching Assistant |

Service to the Profession

COMMITTEES & ORGANIZATIONS

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| 2026 - | Application reviewer for Berkeley EECS MEng program , Read and evaluate applications for admission to Berkeley's EECS professional master programs | UCB |
| 2026 - | EECS PhD Visit Days Coordinator , Coordinate visit days for close to 300 students admitted to the EECS PhD program. | UCB |
| 2025 - | Graduate Student Steering Committee (SCALE Lab) , Assist in planning of activities for safety, autonomy, controls, learning, and embedded systems (SCALE) lab group. | UCB |
| 2024 - | EECS Equal Access to Application Assistance (EEAAA) , Assist underrepresented prospective PhD students on their graduate school applications to help equalize access to guidance on the application process. | UCB |
| 03/2025 | EECS PhD CIR & CPSDA Visit Days , Organization of activities for prospective PhD students in controls, automation, learning, and embedded systems. | UCB |

PEER REVIEW

Conferences (reviewed 1 submission): Conference on Decision and Control (CDC)

Journals (reviewed 1 submission): IEEE Control System Letters (L-CSS)

Awards, Fellowships, & Grants

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| 2025 | Fernström Fellowship , University of California, Berkeley |
| 2023 | NSF Graduate Research Fellowship (GRFP) , National Science Foundation |
| 2021 | Kate Hevner Mueller Senior Award , Indiana University, Bloomington |
| 2020 | Goldwater Scholar , Barry Goldwater Scholarship and Excellence in Education Foundation |