

William A. Sharpless | C.V.

✉ wsharpless@ucsd.edu • 🌐 willsharpless.github.io

Education

University of California, San Diego

Ph.D., Mechanical and Aerospace Engineering

May 2026

Advisor: Sylvia Herbert

University of California, Berkeley, cum laude

B.A. Applied Mathematics & B.S. Biology

Dec 2020

Honors and Awards

2024: Hellman Society Fellow

2024: Office of Naval Research YIP Co-Awardee

2022-2024: NIH/HHMI Interfaces Fellow

2019: Winner of the UC Big Ideas Competition

2018, 2020: UC Berkeley SPUR Grant (2x)

Selected Publications

2024: Sharpless, W., Feng, Z., Bansal, S., & Herbert, S. (Dec. 2024). Linear Supervision for High-Dimensional, Nonlinear Neural Control and Differential Games. *Submitted to L4DC*.

2024: Sharpless, W., Chow, Y. T., & Herbert, S. (Mar. 2024). State-Augmented Linear Games with Antagonistic Error for High-Dimensional, Nonlinear Hamilton-Jacobi Reachability. *CDC*.

2024: Sharpless, W., Chow, Y. T., & Herbert, S. (Apr. 2024). Conservative Linear Envelopes for High-Dimensional, Hamilton-Jacobi Reachability for Nonlinear Systems via the Hopf Formula. *In Review, Transactions on Automatic Control*.

Teaching

2022-2023: Probability and Statistics (UG)

2023: Systems and Control Theory (UG)

Service & Outreach

2023-2024: Outreach Chair, Contextual Robotics Institute Graduate Student Association

2024: Member of the IEEE CSS Technical Committee on Hybrid Systems

2023: Mentor of a Triton Research and Experiential Learning (TREL) scholar

2022-2023: Founder of the URM/FGLI Montgomery Middle School Coding Program

Invited Talks

2024: American Math Society (AMS), Session on Applied Partial Differential Equations

2024: Scientific AI Research Meeting, Oden Institute

2024: Society of Industrial and Applied Mathematics (SIAM), Session on High Dimensional Control and HJE

2023: The Level Set Collective Seminar, UC Los Angeles

Software

HopfReachability.jl: High-Dimensional Differential Game Solver using Nonsmooth Cvx Optimization

DeepReach.py: Deep Learning Approach to High-Dimensional Differential Games (Contributor)