William A. Sharpless | C.V.

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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 Student-Proposed UR Grant (2x)

Publications

2024: Sharpless, W., Chow, Y. T., & Herbert, S. (2024). State-Augmented Linear Games with Antagonistic Error for High-Dimensional, Nonlinear Hamilton-Jacobi Reachability. Conference on Decision and Control.

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

2023: Sharpless, W., Shinde, N., Kim, M., Chow, Y. T., & Herbert, S. (2023). Koopman-Hopf Hamilton-Jacobi Reachability and Control. *In Review*.

Teaching

2023: Systems and Control Theory (UG)

2022-2023: Probability and Statistics (UG)

Service & Outreach

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

2023-2024: Hardware Lead, Safety and Autonomous Systems Group

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

2022-2023: Founder of the Montgomery Coding Program for Under-Represented and Low-Income Children

Invited Talks

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

2024: Scientific AI Research Meeting, Oden Institute

2024: Control and Learning for Autonomous Robotics Meeting, UT Austin

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

2023: Safe and Intelligent Autonomy Meeting, University of Southern California

2023: The Level Set Collective Seminar, UC Los Angeles

Software

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