

## Mark Wilfried Mueller

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## Education

2015 DrSc (Mechanical Engineering) ETH Zurich (adviser: R. D'Andrea)  
2011 MSc (Mechanical Engineering) ETH Zurich (with distinction)  
2008 BEng (Mechanical and Aeronautical Engineering) University of Pretoria (with distinction)

## Professional experience & appointments

2025/10 - present: Vice-chair for Master of Engineering; Mechanical Engineering; UC Berkeley  
2024/07 - present: Associate Faculty Director of Aerospace Programs; College of Engineering; UC Berkeley  
2023/07 - present: Associate Professor, Mechanical Engineering; UC Berkeley  
2016/06 - 2023-07: Assistant Professor, Mechanical Engineering; UC Berkeley  
2015/10 - 2016/07: Research & development engineer, Verity Studios AG  
2011/09 - 2015/10: Research assistant; ETH Zurich  
2009/01 - 2009/08: Junior software practitioner; Denel Dynamics, Centurion, South Africa

## Awards and honours

**Plenary speaker, ICCAS** Plenary lecture at the 2023 International Conference on Control, Automation and Systems, held in Korea  
**DARPA Subterranean Challenge Winners** Member of team CERBERUS, winning 2021 DARPA Subterranean challenge  
**Best Paper Award finalist** in International Journal of Intelligent Robotics and Applications, 2020  
**Best Paper on Unmanned Aerial Vehicles** at IEEE International Conference on Robotics and Automation (ICRA) 2019  
**ABB Research award** 2017  
**ETH Medal** 2016, distinction for Doctoral Thesis  
**Georges Giralt PhD award** 2016, European Robotics Research Network, for best robotics-related PhD thesis defended during the year 2015 at a European PhD-awarding institution  
**Jakob Ackeret prize** 2011, Swiss Association of Aeronautical Sciences for master's thesis "Quadrocopter ball juggling"  
**Swiss government scholarship** (2009 - 2011) for foreign students  
**Best final year project** and **best aeronautical project** 2008, Department of Mechanical and Aeronautical Engineering, University of Pretoria, for bachelor's thesis "UAV Autopilot Implementation: Longitudinal Control"  
**MERSETA scholarship** during bachelor's studies (2007-2008), Manufacturing Engineering and Related Services Sector Education and Training Authority (South Africa)

## Professional service

### Editorial & conference organization

Serving as Associate Editor for *IEEE Robotics and Automation Letters* since 2023.  
Served as Associate Editor of Fault Tolerant Systems for *IEEE Transactions on Aerospace and Electronic Systems* 2017-2023.

Associate Editor for conferences: ICUAS 2020 and IROS 2020, IROS 2022.  
Organizer of Bay Area Robotics Symposium (BARS) since 2019.

## Reviewing

*Journal papers:* IEEE Control Systems Letters, IEEE Robotics and Automation Magazine, IEEE Robotics and Automation Letters, IEEE Transactions on Aerospace and Electronic Systems, IEEE Transactions on Control Systems Technology, IEEE Transactions on Mechatronics, IEEE Open Journal of Control Systems, International Journal of Advanced Robotic Systems, Robotica, Sensors, MDPI Aerospace, Journal of Field Robotics, Journal of the Nigerian Society of Physical Sciences.

*Conference papers:* IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), IEEE Conference on Decision and Control (CDC), IEEE International Conference on Robotics and Automation (ICRA), American Controls Conference (ACC), European Controls Conference (ECC), Robotics Science and Systems (RSS), International Conference on Unmanned Aerial Systems (ICUAS), Mediterranean Conference on Control and Automation, International Federation for Automatic Control (IFAC).

## Publications

### Books

B1. M. W. Mueller, *Dynamics and control of autonomous flight*. Springer, 2025

### Journal articles

- J28. C. Bosio and M. W. Mueller, "Design of autonomous drones," *Europhysics News*, EPN-57-3, 2026
- J27. J. Tang, R. Zhang, K. Beyduz, Y. Jiang, C. Wiebe, H. Zhang, O. Asoro, and M. W. Mueller, "Duawlfm: A drone with unified actuation for wheeled locomotion and flight operation," *IEEE Robotics and Automation Letters*, 2025
- J26. A. Bredenbeck, T. Yang, S. Hamaza, and M. W. Mueller, "A tactile feedback approach to path recovery after high-speed impacts for collision-resilient drones," *Drones*, vol. 9, no. 11, p. 758, 2025
- J25. D. Zhang, A. Loquercio, J. Tang, T.-H. Wang, J. Malik, and M. W. Mueller, "A learning-based quadcopter controller with extreme adaptation," *IEEE Transactions on Robotics*, 2025
- J24. F. Sui, W. Yue, K. Behrouzi, Y. Gao, M. Mueller, and L. Lin, "Untethered subcentimeter flying robots," *Science Advances*, vol. 11, no. 13, eads6858, 2025
- J23. C. Bosio and M. W. Mueller, "Automated layout and control co-design of robust multi-uav transportation systems," *IEEE Robotics and Automation Letters*, 2025
- J22. H. Tang and M. W. Mueller, "PairTilt: Design and control of an active tilt-rotor quadcopter for improved efficiency and agility," *Advanced Intelligent Systems (in press)*, 2025
- J21. J. Zha, T. Yang, and M. W. Mueller, "Agri-fly: Simulator for uncrewed aerial vehicle flight in agricultural environments," *IEEE Access*, 2024
- J20. J. Zha, X. Wu, R. Dimick, and M. W. Mueller, "Design and control of a collision-resilient aerial vehicle with an icosahedron tensegrity structure," *IEEE/ASME Transactions on Mechatronics*, vol. 29, pp. 3449–3460, 2024
- J19. J. Tang, K. P. Jain, and M. W. Mueller, "QUaRTM: A quadcopter with unactuated rotor tilting mechanism capable of faster, more agile, and more efficient flight," *Frontiers in Robotics and AI*, vol. 9, 2022
- J18. X. Wu, S. Chen, K. Sreenath, and M. W. Mueller, "Perception-aware receding horizon trajectory planning for multicopters with visual-inertial odometry," *IEEE Access*, vol. 10, pp. 87 911–87 922, 2022
- J17. X. Wu, J. Zeng, A. Tagliabue, and M. W. Mueller, "Model-free online motion adaptation for energy-efficient flight of multicopters," *IEEE Access*, vol. 10, pp. 65 507–65 519, 2022
- J16. N. Bucki, J. Tang, and M. W. Mueller, "Design and control of a midair-reconfigurable quadcopter using unactuated hinges," *IEEE Transactions on Robotics*, vol. 39, no. 1, pp. 539–557, 2023
- J15. M. W. Mueller, S. J. Lee, and R. D'Andrea, "Design and control of drones," *Annual Review of Control, Robotics, and Autonomous Systems*, vol. 5, 2021

- J14. M. Tranzatto, F. Mascarich, L. Bernreiter, C. Godinho, M. Camurri, S. M. K. Khattak, T. Dang, V. Reijgwart, J. Loeje, D. Wisth, S. Zimmermann, H. Nguyen, M. Fehr, L. Solanka, R. Buchanan, M. Bjelonic, N. Khedekar, M. Valceschini, F. Jenelten, M. Dharmadhikari, T. Homberger, P. De Petris, L. Wellhausen, M. Kulkarni, T. Miki, S. Hirsch, M. Montenegro, C. Papachristos, F. Tresoldi, J. Carius, G. Valsecchi, J. Lee, K. Meyer, X. Wu, J. Nieto, A. Smith, M. Hutter, R. Siegwart, M. Mueller, M. Fallon, and K. Alexis, "CERBERUS: Autonomous legged and aerial robotic exploration in the tunnel and urban circuits of the DARPA Subterranean challenge," *Field Robotics*, vol. 2, pp. 274–324, 2022
- J13. R. Gill, M. W. Mueller, and R. D'Andrea, "Full-order solution to the attitude reset problem for Kalman filtering of attitudes," *Journal of Guidance, Control, and Dynamics*, vol. 43, no. 7, pp. 1232–1246, 2020
- J12. N. Bucki, J. Lee, and M. W. Mueller, "Rectangular pyramid partitioning using integrated depth sensors (rappids): A fast planner for multicopter navigation," *IEEE Robotics and Automation Letters*, vol. 5, no. 3, pp. 4626–4633, 2020
- J11. J. Zeng, P. Kotaru, M. W. Mueller, and K. Sreenath, "Differential flatness based path planning with direct collocation on hybrid modes for a quadrotor with a cable-suspended payload," *IEEE Robotics and Automation Letters*, vol. 5, no. 2, pp. 3074–3081, 2020
- J10. M. W. Mueller and R. D'Andrea, "Trajectory generation for aerial multicopters," in *Encyclopedia of Systems and Control*, J. Baillieul and T. Samad, Eds. London: Springer London, 2019, pp. 1–7
- J9. B. Ghalamchi, Z. Jia, and M. W. Mueller, "Real-time vibration-based propeller fault diagnosis for multicopters," *IEEE/ASME Transactions on Mechatronics*, vol. 25, no. 1, pp. 395–405, 2020
- J8. W. Zhang, M. W. Mueller, and R. D'Andrea, "Design, modeling and control of a flying vehicle with a single moving part that can be positioned anywhere in space," *Mechatronics*, vol. 61, pp. 117–130, 2019
- J7. N. Bucki and M. W. Mueller, "A novel multicopter with improved torque disturbance rejection through added angular momentum," *International Journal of Intelligent Robotics and Applications*, vol. 3, no. 2, pp. 131–143, 2019
- J6. M. W. Mueller, M. Hehn, and R. D'Andrea, "Covariance correction step for Kalman filtering with an attitude," *Journal of Guidance, Control, and Dynamics*, vol. 40, no. 9, pp. 2301–2306, 2016
- J5. M. W. Mueller and R. D'Andrea, "Relaxed hover solutions for multicopters: Application to algorithmic redundancy and novel vehicles," *International Journal of Robotics Research*, vol. 35, no. 8, pp. 873–889, 2015
- J4. M. W. Mueller, M. Hehn, and R. D'Andrea, "A computationally efficient motion primitive for quadcopter trajectory generation," *IEEE Transactions on Robotics*, vol. 31, no. 6, pp. 1294–1310, Dec. 2015
- J3. F. Augugliaro, S. Lupashin, M. Hamer, C. Male, M. Hehn, M. W. Mueller, J. S. Willmann, F. Gramazio, M. Kohler, and R. D'Andrea, "The flight assembled architecture installation: Cooperative construction with flying machines," *IEEE Control Systems Magazine*, vol. 34, no. 4, pp. 46–64, 2014
- J2. S. Lupashin, M. Hehn, M. W. Mueller, A. P. Schoellig, M. Sherback, and R. D'Andrea, "A platform for aerial robotics research and demonstration: The Flying Machine Arena," *Mechatronics*, vol. 24, no. 1, pp. 41–54, 2014
- J1. M. W. Mueller, L. Liebenberg, E. H. Mathews, and P. W. Young, "Quick estimates for analysis and prediction of the flight mechanics of unmanned aerial vehicles," *International Journal of Mechanical Engineering Education*, vol. 40, no. 2, pp. 121–145, 2012

### Conference proceedings (peer reviewed)

- C40. D. Zhang, R. Tao, S. Cheng, N. Hovakimyan, and M. W. Mueller, "A simulation evaluation suite for robust adaptive quadcopter control," in *2026 American Control Conference (ACC)*, IEEE, 2026, pp. 4316–4323
- C39. T. Yang, C. Brommer, and M. W. Mueller, "Feature-based perception-aware multi-uav trajectory planning," in *2026 American Control Conference (ACC)*, IEEE, 2026, pp. 3639–3646
- C38. C. Bosio, M. Guarrera, A. Sangiovanni-Vincentelli, and M. W. Mueller, "Combining large language models and gradient-free optimization for automatic control policy synthesis," in *2026 American Control Conference (ACC)*, IEEE, 2026, pp. 2769–2776
- C37. T.-H. Wang and M. W. Mueller, "Plane-based spatial partitioning using depth sensors: Computationally efficient local trajectory planning for multicopters over obstacles," in *2026 International Conference on Unmanned Aircraft Systems (ICUAS)*, IEEE, 2026, pp. 137–142
- C36. T. Yang and M. W. Mueller, "Agrinav: Uav simulator for vision-based navigation in agricultural environments,"

in *Proceedings of the 9th IFAC Conference on Sensing, Control and Automation Technologies for Agriculture (AGRICONTROL)*, 2025

- C35. C. Bosio and M. W. Mueller, “Synthesizing interpretable control policies through large language model guided search,” in *2025 American Control Conference (ACC)*, IEEE, 2025, pp. 583–590
- C34. R. Zhang, D. Zhang, and M. W. Mueller, “Proxfly: Robust control for close proximity quadcopter flight via residual reinforcement learning,” in *2025 IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2025, pp. 13 683–13 689
- C33. T. Yang, R. Ibrahimov, and M. W. Mueller, “Towards safe and efficient through-the-canopy autonomous fruit counting with uavs,” in *2025 IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2025, pp. 15 560–15 566
- C32. R. Ibrahimov, T. Yang, and M. W. Mueller, “Kalman filter-based drift detection and mitigation of visual-inertial odometry in uavs,” in *2025 American Control Conference (ACC)*, IEEE, 2025, pp. 457–462
- C31. D. Zhang, A. Loquercio, X. Wu, A. Kumar, J. Malik, and M. W. Mueller, “Learning a single near-hover position controller for vastly different quadcopters,” in *IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2023, pp. 1263–1269
- C30. J. Lee, X. Wu, S. Lee, and M. W. Mueller, “Autonomous flight through cluttered outdoor environments using a memoryless planner,” in *International Conference on Unmanned Aerial Systems (ICUAS)*, Jun. 2021
- C29. J. Byun, S. Mäkiharju, and M. W. Mueller, “A flow disturbance estimation and rejection strategy for multirotors with round-trip trajectories,” in *International Conference on Unmanned Aerial Systems (ICUAS)*, Jun. 2021
- C28. J. Zha and M. W. Mueller, “Exploiting collisions for sampling-based multicopter motion planning,” in *IEEE International Conference on Robotics and Automation (ICRA)*, May 2021
- C27. K. P. Jain, J. Tang, K. Sreenath, and M. W. Mueller, “Staging energy sources to extend flight time of a multirotor uav,” in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2020, pp. 1132–1139
- C26. X. Wu and M. W. Mueller, “In-flight range optimization of multicopters using multivariable extremum seeking with adaptive step size,” in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2020, pp. 1545–1550
- C25. J. Zha, X. Wu, J. Kroeger, N. Perez, and M. W. Mueller, “A collision-resilient aerial vehicle with icosahedron tensegrity structure,” in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2020, pp. 1407–1412
- C24. K. P. Jain and M. W. Mueller, “Flying batteries: In-flight battery switching to increase multirotor flight time,” in *IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2020, pp. 3510–3516
- C23. X. Wu and M. W. Mueller, “Using multiple short hops for multicopter navigation with only inertial sensors,” in *IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2020, pp. 8559–8565
- C22. K. L. Poggensee, A. H. Li, D. Sotsaichik, B. Zhang, P. Kotaru, M. Mueller, and K. Sreenath, “Ball juggling on the bipedal robot cassie,” in *2020 European Control Conference (ECC)*, IEEE, 2020, pp. 875–880
- C21. N. Bucki and M. W. Mueller, “Rapid collision detection for multicopter trajectories,” in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019
- C20. G. Zhang, J. Alcala, J. Ng, M. Chen, X. Wu, M. W. Mueller, and Y. Chen, “Embedding consequence awareness in unmanned aerial systems with generative adversarial networks,” in *International Conference on Unmanned Aerial Systems (ICUAS)*, IEEE, 2019, pp. 129–134
- C19. J. Zha, E. Thacher, J. Kroeger, S. A. Mäkiharju, and M. W. Mueller, “Towards breaching a still water surface with a miniature unmanned aerial underwater vehicle,” in *International Conference on Unmanned Aerial Systems (ICUAS)*, IEEE, 2019, pp. 1178–1185
- C18. K. P. Jain, T. Fortmuller, J. Byun, S. A. Mäkiharju, and M. W. Mueller, “Modeling of aerodynamic disturbances for proximity flight of multirotors,” in *International Conference on Unmanned Aerial Systems (ICUAS)*, IEEE, 2019, pp. 1261–1269
- C17. N. Bucki and M. W. Mueller, “Design and control of a passively morphing quadcopter,” in *IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2019
- C16. A. Tagliabue, X. Wu, and M. W. Mueller, “Model-free online motion adaptation for optimal range and endurance of multicopters,” in *IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2019
- C15. N. Bucki and M. W. Mueller, “Improved quadcopter disturbance rejection using added angular momentum,” in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2018, pp. 4164–4170

- C14. X. Wu and M. W. Mueller, "Towards a consequences-aware emergency landing system for unmanned aerial systems," in *International Conference on Unmanned Aerial Systems (ICUAS)*, IEEE, 2018, pp. 1025–1030
- C13. B. Ghalamchi and M. W. Mueller, "Vibration based propeller fault diagnosis for multicopters," in *International Conference on Unmanned Aerial Systems (ICUAS)*, IEEE, 2018, pp. 1041–1047
- C12. M. W. Mueller, "A dynamics-agnostic state estimator for unmanned aerial vehicles using ultra-wideband radios," in *ASME Dynamic Systems and Control Conference (DSCC)*, American Society of Mechanical Engineers, 2018, V003T36A002–V003T36A002
- C11. S. Fahandezh-Saadi and M. W. Mueller, "Optimal measurement selection algorithm and estimator for ultra-wideband symmetric ranging localization," in *International Conference on Unmanned Aerial Systems (ICUAS)*, IEEE, 2018, pp. 229–235
- C10. S. Fahandezh-Saadi and M. W. Mueller, "An algorithm for real-time restructuring of a ranging-based localization network," in *International Conference on Unmanned Aerial Systems (ICUAS)*, IEEE, 2018, pp. 236–242
- C9. C. Holda, B. Ghalamchi, and M. W. Mueller, "Tilting multicopter rotors for increased power efficiency and yaw authority," in *International Conference on Unmanned Aerial Systems (ICUAS)*, IEEE, 2018, pp. 143–148
- C8. W. Zhang, M. W. Mueller, and R. D'Andrea, "A controllable flying vehicle with a single moving part," in *IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2016, pp. 3275–3281
- C7. M. W. Mueller, M. Hamer, and R. D'Andrea, "Fusing ultra-wideband range measurements with accelerometers and rate gyroscopes for quadcopter state estimation," in *IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2015, pp. 1730–1736
- C6. M. W. Mueller and R. D'Andrea, "Stability and control of a quadcopter despite the complete loss of one, two, or three propellers," in *IEEE International Conference on Robotics and Automation (ICRA)*, IEEE, 2014, pp. 45–52
- C5. M. W. Mueller, M. Hehn, and R. D'Andrea, "A computationally efficient algorithm for state-to-state quadcopter trajectory generation and feasibility verification," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2013, pp. 3480–3486
- C4. M. W. Mueller and R. D'Andrea, "A model predictive controller for quadcopter state interception," in *European Control Conference (ECC)*, 2013, pp. 1383–1389
- C3. M. W. Mueller and R. D'Andrea, "Critical subsystem failure mitigation in an indoor UAV testbed," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2012, pp. 780–785
- C2. R. Ritz, M. W. Mueller, M. Hehn, and R. D'Andrea, "Cooperative quadcopter ball throwing and catching," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2012, pp. 4972–4978
- C1. M. W. Mueller, S. Lupashin, and R. D'Andrea, "Quadcopter ball juggling," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2011, pp. 5113–5120

## Patents granted

- P4. F. Augugliaro, R. D'Andrea, M. Hehn, M. Waibel, and M. W. Mueller, "Systems and methods for charging, transporting, and operating flying machines," *US11643205B2*, 2021
- P3. R. D'Andrea, M. Waibel, M. W. Mueller, and M. Hehn, "Invisible track for an interactive mobile robot system," *US10613527B2*, 2020
- P2. M. W. Mueller, S. Lupashin, R. D'Andrea, and M. Waibel, "Volitant vehicle rotating about an axis and method for controlling the same," *US10464661B2*, 2019
- P1. M. W. Mueller, S. Lupashin, R. D'Andrea, and M. Waibel, "Controlled flight of a multicopter experiencing a failure affecting an effector," *US10308349B2*, 2014

## Conferences / symposia without peer review

- S2. T.-H. Wang, R. Luo, J. Yang, X. Zheng, E. Zou, J. Kam, L. R. Rubi, and M. W. Mueller, "Design and evaluation of an eVTOL urban air mobility system for optimizing commute efficiency," in *Vertical Flight Society (VFS) Annual Forum*, Vertical Flight Society (VFS), 2025
- S1. T. Yang, J. Zha, and M. W. Mueller, "Path planning for efficient fruit counting using unmanned aerial vehicles," in *FIRA USA California Agricultural Robotics and Technology Forum*, FIRA USA, 2023

## Teaching

- Experiential Advanced Control Design II (ME231B/EE220C), graduate level, 2020 – 2025.
- Introduction to control of unmanned aerial vehicles (ME136 / ME236U, AE136 since 2026), undergraduate and graduate, 2017 – 2020, 2022 – 2024, 2026.
- Introduction to Aerospace Engineering Design (AE10), co-taught 2023 – 2025.
- Mathematical Methods in Engineering (E231), graduate level, co-taught 2019.
- Engineering Mechanics II (ME104), undergraduate core, 2019.
- Advanced Controls II (ME233), graduate level, 2017, 2018.

## Supervision

### PhD students / candidates

*Graduated:* Haoyun (Jerry) Tang (2025). Karan Jain (2023); Jiaming (Clark) Zha (2023); Xiangyu Wu (2022); Nathan Bucki (2021).

*Continuing, marked ‘+’ if passed qualifying exam:* Eric Foss (2030); Ruiqi (Rich) Zhang (2028); Yuting (Teaya) Yang (2027); Carlo Bosio (+2027); Dingqi (Daisy) Zhang (+2026); Ting-Hao Wang (+2026).

*Visiting PhD students:* Anton Bredenbeck, TU Delft (2024).

### MSc students

*Graduated:* Dimitri Jacquement (visitor 2025); Roman Ibrahimov (2025); Giancarlo Cuccorese (visitor 2024); Youngsang Suh (2022); Junseok Lee (2021); Ryan Dimick (2021); Ean Hall (2020); Jiaming (Clark) Zha (2020); Xiangyu Wu (2019); Nathan Bucki (2018); Conrad Holda (2018); Andrea Tagliabue (visitor, 2018); Dennis Schradick (visitor, 2018); Alexis Leautier (2017); Tobias Dollinger (visitor, 2017); Weixuan Zhang (ETHZ, 2015); Thomas Kägi (ETHZ, 2014); Simon Berger (ETHZ, 2013); Robin Ritz (ETHZ, 2012).

### MEng students

*Continuing:* Alan Chen; Alejandro Municio; Andrew Tai; Ben Finch; Bharath Mohan; Ian Mansfield; Michael James Howo; Roshan Joshua Thomas; Ryan Jacobs Funchess; Xingze Li; Ziling Tang.

*Graduated:* Dongqi Zuo (2025); Eric Schuster (2025); Johnson Chiang (2025); Mingxuan Wang (2025); Pinyu Pan (2025); Milan Rosic (2025); Ruonan Yang (2025); Jannik Heinen (2025); Yuxuan Peng (2025); Qiyuan Liu (2025); Vlad Rosca (2025); Weixing Guo (2025); Xinran Yang (2025); Yunhao Liang (2025); Enyang Zou (2024); Kaiqi Yang (2024); Rain Luo (2024); Xi Zheng (2024); Amir Tadros (2024); John Choi (2024); Valerio He (2024); Cody Wiebe (2024); Kaan Beyduz (2024); Haoyu Zhang (2024); Osaruese Asoro (2024); Yiwei Jiang (2024); Madhumita Kumar (2024); Gregoire Charleux (2024); Lilo Krief-Pele (2024); Remi Bussac (2022); Julian Garcia (2022); Jill Alexander (2022); Joey Zhu (2021).

### Undergraduate students

William Su (2024-); Alan Chen (2023-2024); Yiheng Ji (2023-2024); Michael Qi (2023-2024); Oscar Lopez (2023); Jordan Kam (2023-2024); Leire Roma Rubi (2023-2024); Wentao Zhang (2023); Madeline Bumpus (2023); Samantha Averitt (2022-2024); Madison Carter (2022); Autumn Edwards (2022); Ronan Loberg (2022); Elvis Lo (2021-2022); Charlie Bright (2021-'22); Bryan Yang (2021-'22); Pranav Kolluri (2021); Karan Mahesh (2020-'21) Natalia Perez (2019-'21); Alex Chemali (2020-'21); Samuel Jonhson (2020-'21); Ambrose Liu (2020-'21); Jerry Tang (2020); Dylan Callaway (2020); Nico Carballal (2020); Aaron Lin (2020); Lily Zheng (2020); Minos Park (2020); Guarav Jalan (2019); Joey Kroeger (2019); Trey Fortmuller (2019); Christian Castaneda (2019); Mighty Chen (UC Merced, 2018); Jonathan Murata (2017); Eugene Lo (2017); Nemo Jin (2017); Anke (Kevin) Zhang (2017); Arbaaz Shakir (2017); Kegan Kawamura (2017); Loren Newton (2016); Keenan Rodewald (2016); Elias Kaufmann (ETHZ, 2014); Martin Wermelinger (ETHZ, 2013); Pascal Püntener (ETHZ, 2012).

## Research grants

15. “UAVs for coating solar panels” as co-PI with my share \$160k, funding from *Cal-next Solar Center*, 2025-2026.
14. “Autonomous Drone Swarms for Rapid Regional-scale Rapid Damage Assessment” as co-PI, total budget \$150k with my share \$70k, funding from *Caltrans*, 2024-2025.
13. “Joint Centre on Service Robotics” as co-PI, total budget \$4M with my share \$750k, funding from *HKCLR*, 2021-2026.
12. “Enhanced Resilience of Cooperative Aerial Payload Transport Under Ballistic Impacts” as sole PI, total budget \$15k, funding from *Powley Fund, Mech. Eng. Dept.*, 2023.
11. “Aerial Robots for Construction” as co-PI, approx. \$240k of which my share approx. \$120k, funding from *Tsinghua-Berkeley Shenzhen Institute*, 2022-2023.
10. “High-speed and reactive planning, localization, perception and navigation for aerial robots in dynamic off-road environments” as PI, total budget of \$947k with my share \$462k, funding from *Army Research Laboratory*, 2020-2021.
9. “AI Institute for Sustainable Food Systems” as co-PI, total budget of \$5M with my share \$400k, funding from *National Science Foundation*, 2020-2024.
8. “Control of VTOL vehicles in high wind shear environments”, as sole PI, total budget of \$115k, funding from *Code42.ai*, 2020.
7. “Autonomous Aerial Robots in Dense Urban Environments”, as PI, total budget of \$100k with my share \$50k, funding from *BAIR/BDD*, 2019-2020.
6. “Design Considerations For Aerial Transportation – An Energy Focus” as sole PI, total budget of \$115k, funding from *Naver corporation*, 2019.
5. “CERBERUS: Collaborative walking & flying RoBots for autonomous Exploration in Underground Settings” as co-PI, total budget \$4.4M, with my share \$326k, funding from *DARPA*, 2018-2022.
4. “Cloud-based Anytime Computation of Reachable Tubes for Provably Safe Unmanned Aerial Systems Traffic Management” as co-PI, total budget \$60k with my share \$30k, , funding from *Center for Information Technology Research in the Interest of Society and the Banatao Institute (CITRIS)*, 2018-2019.
3. “Aerial Robotics Designs with Improved Resilience to Small Ballistics Impacts” as sole PI, total budget \$29k, funding from *Powley Fund, Mech. Eng. Dept.*, 2017-2018.
2. “Consequences-aware co-piloting system for human-in-the-loop drone operations” as PI. Total budget \$60k, funding from *Center for Information Technology Research in the Interest of Society and the Banatao Institute (CITRIS)*, 2017-2018.
1. “On the material, structural and dynamical response of UAVs to ballistic impact-with implications to the privacy of citizens” as PI. Total budget \$70k, funding from *Powley Fund, Mech. Eng. Dept.*, 2016-2017.

## Invited talks

### Technical audience

58. Air Time by NAMS-2, *Invited seminar at NASA Ames*, 2026/03/04.
57. Stanford University, *Departmental seminar*, 2025/04.
56. Bay Area Drones Fest, *Speaker*, 2025/04.
55. UCLA, *Departmental seminar*, 2025/04.
54. UC Davis, *Departmental seminar*, 2025/04.
53. UC Berkeley, BAIR, *Symposium presentation*, 2025/04.
52. UC Davis, AIFS speaker series, *Invited presentation*, 2025/03.
51. Northern California Aerospace Symposium, *Speaker*, 2025/02.
50. Caltech, *Invited presentation*, 2025/01.
49. Mathworks Advanced Research and Technology Forum, *Invited presentation (online)*, 2024/07.
48. Seoultech special lecture series, *Invited Talk (online)*, 2024/07.
47. NASA-UC Technical Summit, *Workshop presentation*, 2024/04.
46. IEEE Conference on Decision and Control Workshop on Unmanned Systems, *Workshop presentation*, 2023/12.

45. International Conference on Control, Automation, and Systems , *Plenary*, 2023/10.
44. Hong Kong Center for Logistics Robotics, *Invited Talk*, 2022/12.
43. University of Philadelphia, *Departmental colloquium*, 2022/10.
42. University of Illinois, *Departmental colloquium*, 2022/10.
41. Chinese University of Hong Kong, *Invited Talk*, 2022/06.
40. University of New Mexico, Aerial and Space Robotics Workshop, *Invited Talk*, 2022/06.
39. ETH Zurich Control Seminar, *Invited Talk*, 2021/12.
38. NSF Pire Workshop, *Invited speaker*, 2021/06.
37. ETH Zurich, Autonomy Talks, *Invited Seminar*, 2020/12.
36. University of Michigan, College Control seminar series, *Invited Talk*, 2020/09.
35. UC Agriculture and Natural Resources at UC Davis, Drone Camp, *Plenary*, 2020/07.
34. UC Davis, MAE 296 seminar series, *Invited Seminar*, 2020/05.
33. NSF-PIRE, Workshop on Assured CPS Autonomy for 2D Urban Transportation, *Invited Talk*, 2021/06.
32. Sustainable Aviation Symposium, UC Berkeley, *Invited Seminar*, 2019/12.
31. NASA JPL, Robotics section talk, *Invited Seminar*, 2019/07.
30. KTH Sweden, Summer School on Cyber Physical Systems, *Invited Seminar*, 2019/06.
29. Stanford University, Robotics Seminar Series, *Invited Seminar*, 2019/02.
28. UC Berkeley, Sustainable Aviation Symposium, *Invited Talk*, 2018/12.
27. The Ohio State University, Advanced aerospace systems, *Invited Seminar*, 2018/11.
26. UC Berkeley, Berkeley Fire Research Workshop, *Talk*, 2018/05.
25. University of Illinois at Urbana-Champaign, Aerospace, *Invited Seminar*, 2018/04.
24. Airbus A<sup>2</sup> Vahana, *Seminar*, 2018/07.
23. Huawei, STW annual conference, *Invited Talk*, 2017/05.
22. UC Santa Cruz, Control series, *Invited Seminar*, 2017/05.
21. UC Merced, *UAS workshop*, 2017/04.
20. Autodesk / UC Berkeley research exchange, *Invited Seminar*, 2017/01.
19. University of Nevada Computer Science series, *Invited Seminar*, 2016/11.
18. UC Berkeley Integrative Biology Group, *Invited Seminar*, 2016/09.
17. NASA Ames, Intelligent Robotics Group, *Invited Seminar*, 2016/08.
16. UC Berkeley, Institute of Transportation Studies, *Invited Seminar*, 2016/02.
15. Stanford University, Aeronautics and Astronautics, *Invited Seminar*, 2016/01.
14. Lawrence Berkeley Lab / UC Berkeley Mechanical Engineering Series, *Invited Seminar*, 2016/01.
13. UC Berkeley, Geo informatics Geo Lunch, *Invited Seminar*, 2015/11.
12. UC Berkeley, Pacific Earthquake Engineering Research Center, *Invited seminar*, 2015/09.
11. UC Berkeley, CITRIS CPAR/DREAMS series, *Invited Seminar*, 2015/09.
10. University of Illinois, *seminar*, 2015/04.
9. California Institute of Technology, *seminar*, 2015/03.
8. UC Berkeley, *seminar*, 2015/03.
7. ETH Zurich, *Control seminar series*, 2014/10.
6. University of Toronto, *Systems Control Seminar*, 2014/03.
5. University of Waterloo, *Invited talk*, 2014/03.
4. California Institute of Technology, *Lunch talk*, 2014/02.
3. Hong Kong University of Science and Technology, *Frontiers of Robotics and Autonomous Systems*, 2013/06.
2. ETH Zurich, *Swiss-Kyoto Symposium*, 2012/11.
1. University of Johannesburg, *Computer Science Seminar*, *University of Witwatersrand*, 2012/10.

## General audience

18. IEX Collider (UC Berkeley / IE University), *Invited speaker*, 2025/10.
17. Sky's Not The Limit: Entrepreneurship, Innovation, and AI in the Aerospace Era, *Keynote*, 2025/10.
16. Shorelight Applied AI series, *Lecture (2)*, 2025/07.
15. Shorelight Applied AI series, *Lecture (2)*, 2024/07.

14. École des Ponts Business School at Berkeley Sutardja Center for Entrepreneurship, *Invited Talk*, 2024/04.
13. Drone Camp, *Instructor*, 2021/07.
12. Tau Beta Pi Honor Society, *Annual General Meeting*, 2021/03.
11. Women's Faculty Club, UC Berkeley, *Robots, Poets and Music*, 2018/04.
10. Tau Beta Pi Honor Society, *Annual General Meeting*, 2018/03.
9. Mass-mind, UC Berkeley, *"Game of drones" information event*, 2016/10.
8. Turku (Finland), *Technology Academy Finland*, 2015/10.
7. Zurich (Switz.), *Drones: From Technology to Policy, Security to Ethics*, 2015/01.
6. Thun (Switz.), *Future UAS Technologies Workshop*, 2015/01.
5. Bern (Switz.), *Swiss Drone Day*, 2014/11.
4. Airbus, Toulouse (France), *TEDxAirbus*, 2014/10.
3. Cape Town (South Africa), *Public lecture, 19th World Congress of the International Federation of Automatic Control*, 2014/08.
2. Aschaffenburg (Germany), *Cooperation Forum: Advanced Driver Assistance Systems, Bayern Innovativ*, 2013/05.
1. Zurich (Switz.), *General assembly, Swiss Association of Aeronautical Sciences*, 2012/05.