

NICOLA BEZZO

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Academic Positions

- **Assistant Professor (research focus: Cyber-Physical Systems & Robotics)** — 01/2016–present
Engineering Systems and Environment (Primary), Electrical and Computer Engineering (Secondary), Computer Science (Courtesy), University of Virginia, Charlottesville, VA USA.
- **Postdoctoral Researcher (research focus: Cyber-Physical Systems & Robotics)** — 11/2012–12/2015
Computer Science, University of Pennsylvania, Philadelphia, PA, USA.
- **Research Assistant in Electrical and Computer Engineering (research focus: Robotics & Control Systems)** — 08/2008–10/2012
Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, USA.
- **Research Assistant in Electrical Engineering (research focus: Automation & Electrical Measurements)** — 09/2007–07/2008
Electrical Engineering, Politecnico di Milano, Milan, ITALY.

Education

- **Postdoc in Computer Science (Robotics & Cyber-Physical Systems)** — 11/2012–12/2015
University of Pennsylvania, Philadelphia, PA, USA.
- **Ph.D. in Electrical and Computer Engineering (Robotics & Control Systems)** — 08/2008–10/2012
University of New Mexico, Albuquerque, NM, USA.
- **Master of Science in Electrical Engineering** — 08/2006–07/2008
Politecnico di Milano, Milan, ITALY.
 - Degree with honor (summa cum laude).
- **Exchange Student 1st year of Master in Electrical Engineering** — 08/2006–08/2007
Oklahoma State University, Stillwater, OK, USA.
 - GPA: 3.9/4.0.
- **Bachelor of Science in Electrical Engineering** — 09/2003–07/2006
Politecnico di Milano, Milan, ITALY.
 - Degree with honor (summa cum laude).

Honors & Awards

- Recipient of the IEEE Systems & Information Design Symposium (SIEDS) "Best Paper Award" (2018).
- Recipient of the IEEE Robotics & Automation Magazine (RAM) "Best Paper Award" (2016).
- Recipient of two DARPA HACMS outstanding service awards (2015, 2013).
- Recipient of the "Best Paper Award" at ACM/IEEE International Conference on Cyber Physical Systems (ICCPs), CPSWeek (2014).
- Recipient of the "Outstanding Student Service Award" from the University of New Mexico (2011).

- Awarded the Gold Medal from the Politecnico School of Engineering, for best graduate student in Electrical Engineering (2010).
- N° 2 degrees with honor (summa cum laude) from Politecnico di Milano (2008, 2006).
- Recipient of the "President Honor Roll for Outstanding Academic Performance" from Oklahoma State University (2007).
- Ranked 11th among 30.000 applicants at Politecnico di Milano Entrance Exam (2003).

Publications

- **Peer reviewed Journals:**

- P. Bonczek, R. Peddi, S. Gao, **N. Bezzo**, **N. Bezzo**, *Resilient Coordination of Robotic Swarms Against Non-Random Attacks*. In 2021 Transactions on Robotics (TRO) (under review)
- C. Di Franco, **N. Bezzo**, *Interpretable Run-time Monitoring and Replanning for Safe Autonomous Systems Operations*. In IEEE Robotics and Automation Letters (RAL), 2020 – Impact = 4.0
- E. Yel, **N. Bezzo**, *Computation-Aware Adaptive Planning and Scheduling for Safe Unmanned Airborne Operations*. In Journal of Intelligent and Robotic Systems (JINT), 2020 – Impact = 3.0
- E. Yel, T. Carpenter, R. Ivanov, C. Di Franco, J. Weimer, I. Lee, **N. Bezzo**, *Assured Run-time Monitoring and Planning: Towards Verification of Deep Neural Networks for Safe Autonomous Operations*. In IEEE Robotics and Automation Magazine (RAM), 2020 – Impact = 4.5
- M. Pajic, J. Weimer, **N. Bezzo**, O. Sokolsky, G. J. Pappas, I. Lee, *Design and Implementation of Attack-Resilient Cyber-Physical Systems*. In IEEE Control Systems Magazine (CSM), vol. 37, issue 2, pp. 66-81, 2017 – Impact = 3.66
- **N. Bezzo**, A. Mehta, C. D. Onal, M. T. Tolley, *Robot Makers: The Future of Digital Rapid Design and Fabrication of Robots*. In IEEE Robotics and Automation Magazine (RAM), vol. 22, pp. 27-36, 2015. (Best Paper Award) – Impact = 3.57
- **N. Bezzo**, P. Cruz, F. Sorrentino, and R. Fierro, *Decentralized identification and control of networks of coupled mobile platforms through adaptive synchronization of chaos*. In Elsevier Physica D, vol. 267, pp. 94-103, 2014 – Impact = 2.0
- **N. Bezzo**, B. Griffin, P. Cruz, J. Donahue, R. Fierro, and J. Wood, *A Cooperative Heterogeneous Mobile Wireless Mechatronic System*. In IEEE/ASME Transactions on Mechatronics, vol. 19, no. 1, pp. 20-31, 2014 – Impact = 4.00
- **N. Bezzo**, R. Fierro, A. Swingler, and S. Ferrari, *A Disjunctive Programming Approach for Motion Planning of Mobile Router Networks*. In International Journal of Robotics and Automation (Special Issue), vol. 26, no. 1, pp. 13-25, 2011 – Impact = 1.5

- **Peer reviewed Conferences:**

- E. Yel, **N. Bezzo**, *GP-based Runtime Planning, Learning, and Recovery for Safe UAV Operations under Unforeseen Disturbances*. In IEEE International Conference on Intelligent Robots and Systems (IROS), Las Vegas, NV, Oct. 25 - 29, 2020 – Acceptance Rate = 45%.
- R. Peddi, C. Di Franco, S. Gao, **N. Bezzo**, *A Data-driven Framework for Proactive Intention-Aware Motion Planning of a Robot in a Human Environment*. In IEEE International Conference on Intelligent Robots and Systems (IROS), Las Vegas, NV, Oct. 25 - 29, 2020 – Acceptance Rate = 45%.
- C. Hilderbrandt, S. Elbaum, **N. Bezzo**, M.B. Dwyer, *A Feasible and stressful trajectory generation for mobile robots*. In 29th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), Los Angeles, CA, Jul. 18 - 22, 2020 – Acceptance Rate = 15%.
- C. Di Franco, **N. Bezzo**, *Interpretable Run-time Monitoring and Replanning for Safe Autonomous Systems Operations*. In IEEE International Conference on Robotics and Automation (ICRA), 2020 – Acceptance Rate = 40%.

- C. Hilderbrandt, S. Elbaum, **N. Bezzo**, *Blending Kinematic and Software Models for Tighter Reachability Analysis*. In International Conference on Software Engineering (ICSE), 2020 – Acceptance Rate = 15%.
- P. Bonczek, **N. Bezzo**, *Model-based Randomness Monitor for Stealthy Sensor Attacks*. In 2020 American Control Conference (ACC) – Acceptance Rate = 60%
- P. Bonczek, **N. Bezzo**, *Memoryless Cumulative Sign Detector for Stealthy CPS Sensor Attacks* In 2020 International Federation of Automatic Control (IFAC) – Acceptance Rate = 50%
- E. Yel, **N. Bezzo**, *Fast Run-time Monitoring, Replanning, and Recovery for Safe Autonomous System Operations*. In IEEE International Conference on Intelligent Robots and Systems (IROS), Macau, China, Nov. 4 - 8, 2019 – Acceptance Rate = 45%.
- R. Peddi, **N. Bezzo**, *Parameter-free Regression-based Autonomous Control of Off-the-shelf Quadrotor UAVs*. In IEEE International Conference on Unmanned Aerial Systems (ICUAS), Atlanta, GA, June 11 - 14, 2019 – Acceptance Rate = 60%.
- S. Gao, C. Di Franco, D. Carter, D. Quinn, **N. Bezzo**, *Exploiting Ground and Ceiling Effects on Autonomous UAV Motion Planning*. In IEEE International Conference on Unmanned Aerial Systems (ICUAS), Atlanta, GA, June 11 - 14, 2019 – Acceptance Rate = 60%.
- Z. Vatansever, M. Brandt-Pearce, **N. Bezzo**, *Localization in Optical Wireless Sensor Networks for IoT Applications*. In IEEE International Conference on Communications (ICC) May 20, 2019.
- E. Yel, T. Lin, **N. Bezzo**, *Self-triggered Adaptive Planning and Scheduling of UAV Operations*. In 2018 IEEE International Conference on Robotics and Automation (ICRA), Brisbane, Australia, May 21-25 2018, pp. 7518-7524 – Acceptance Rate = 40%.
- T. Lin, **N. Bezzo**, *Energy-aware Persistent Control of Heterogeneous Robotic Systems*. In 2018 American Control Conference (ACC), Milwaukee, WI, June 27-29 2018, pp. 2782-2787 – Acceptance Rate = 50%.
- M. Elnaggar, **N. Bezzo**, *An IRL Approach for Cyber-Physical Attack Intention Prediction and Recovery*. In 2018 American Control Conference (ACC), Milwaukee, WI, June 27-29 2018, pp. 222-227 – Acceptance Rate = 50%.
- E. Yel, T. Lin, **N. Bezzo**, *Reachability-based self-triggered scheduling and replanning of UAV operations*. In 2017 IEEE NASA/ESA Conference of Adaptive Hardware and Systems (AHS), Pasadena, CA, July 24-27 2017, pp. 221-228 – Acceptance Rate = 55%.
- M. Elnaggar, J. D. Hiser, T. Lin, A. Nguyen-Tuong, M. Co, J. W. Davidson, **N. Bezzo**, *Online control adaptation for safe and secure autonomous vehicle operations*. In 2017 NASA/ESA Conference of Adaptive Hardware and Systems (AHS), Pasadena, CA, July 24-27 2017, pp. 101-108 – Acceptance Rate = 55%.
- E. Yel, T. Lin, **N. Bezzo**, *Reachability-based self-triggered UAV motion planning*. In 2017 International Symposium on Aerial Robotics, June 19-20 2017 – Acceptance Rate Unknown.
- **N. Bezzo**, K. Mohta, C. Nowzari, I. Lee, V. Kumar, G. Pappas, *Online Planning for Energy-efficient and Disturbance-aware UAV Operations*. In IEEE International Conference on Intelligent Robots and Systems (IROS), Daejeon, South Korea, October 9-14, 2016, pp. 5027-5033 – Acceptance Rate = 45%.
- **N. Bezzo**, J. Weimer, Y. Du, O. Sokolsky, S. H. Son, I. Lee, *A Stochastic Approach for Attack Resilient UAV Motion Planning*. In 2016 American Control Conference (ACC 2016), Boston (MA), July 6-8, 2016, pp. 1366-1372 – Acceptance Rate = 50%.
- Y. Shoukry, P. Nuzzo, **N. Bezzo**, A. L. Sangiovanni-Vincentelli, S. A. Seshia, P. Tabuada, *Secure State Reconstruction in Differentially Flat Systems Under Sensor Attacks Using Satisfiability Modulo Theory Solving*. In IEEE Control and Decision Conference (CDC), Osaka, Japan, Dec. 15 - 18, 2015, pp. 3804-3809 – Acceptance Rate = 56%.
- **N. Bezzo**, M. Piccoli, P. Gebhard, V. Kumar, M. Yim, I. Lee, *Rapid Co-design of electro-mechanical specifications for robotic systems*. In ASME 2015 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2015), Boston, MA, Aug. 2 - 5, 2015 – Acceptance Rate = 60%.

- N. Bezzo, J. Weimer, M. Pajic, O. Sokolsky, G. J. Pappas, I. Lee, *Attack Resilient State Estimation for Autonomous Robotic Systems*. In IEEE International Conference on Intelligent Robots and Systems (IROS), Chicago, IL, Sept. 14 - 18, 2014, pp. 3692-3698 – Acceptance Rate = 46%.
- J. Weimer, O. Sokolsky, N. Bezzo, and I. Lee, *Towards Assurance Cases for Resilient Control Systems*. In IEEE International Conference on Cyber-Physical Systems, Networks, and Application (CPSNA), Hong Kong, China, August 25 - 26, 2014, pp. 1-6. (Invited Paper) – Acceptance Rate Unknown.
- A. Mehta, N. Bezzo, P. Gebhard, B. An, V. Kumar, I. Lee, and D. Rus, *A Design Environment for the Rapid Specification and Fabrication of Printable Robots*. In International Symposium on Experimental Robotics (ISER), Marrakech/Essaouira, Morocco, June 15 - 18, 2014 – Acceptance Rate Unknown.
- M. Pajic, J. Weimer, N. Bezzo, P. Tabuada, O. Sokolsky, I. Lee, and G. J. Pappas, *Robustness of Attack-resilient State Estimators*. In ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS), Berlin, Germany, April 14 - 17, 2014, pp. 163-174 (**Best Paper Award**) – Acceptance Rate = 25%.
- J. Weimer, N. Bezzo, M. Pajic, O. Sokolsky, and I. Lee, *Attack-Resilient Minimum Mean-Squared Error Estimation*. In 2014 American Control Conference (ACC 2014), Portland (OR), June 4-6, 2014, pp. 1366-1372 – Acceptance Rate = 50%.
- N. Bezzo, F. Sorrentino, and R. Fierro, *Decentralized Estimation of Topology Changes in Wireless Robotic Networks*. In American Control Conference (ACC), Washington D.C., June 17-19, 2013, pp. 5899-5904 – Acceptance Rate = 50%.
- N. Bezzo, M. Anderson, and R. Fierro, *A Real World Coordination Framework for Connected Heterogeneous Robotic Systems*. International Symposium on Distributed Autonomous Robotic Systems (DARS), Baltimore, MD, November 8-11, 2012 – Acceptance Rate = 40%.
- N. Bezzo, and R. Fierro, *Decentralized Connectivity and User Localization Via Wireless Robotic Networks*. In IEEE Global Communications Conference (GLOBECOM), Wi-UAV, Houston, TX, December 5, 2011, pp. 1285-1290 – Acceptance Rate = 36%.
- N. Bezzo, Y. Yuan, R. Fierro, and Y. Mostofi, *A Decentralized Connectivity Strategy for Mobile Router Swarms*. In the 18th World Congress of the International Federation of Automatic Control (IFAC), Milan, Italy, August 30, 2011 – Acceptance Rate = 55%.
- N. Bezzo, and R. Fierro, *Swarming of Mobile Router Networks*. In American Control Conference (ACC), San Francisco, CA, July 1, 2011, pp. 4685-4690 – Acceptance Rate = 60%.
- N. Bezzo, and R. Fierro, *Tethering of Mobile Router Networks*. In American Control Conference (ACC), Baltimore, MD, June 30, 2010, pp. 6828-6833 – Acceptance Rate = 60%.

- **Book Chapters:**

- A. Mehta, N. Bezzo, P. Gebhard, B. An, V. Kumar, I. Lee, and D. Rus, *A Design Environment for the Rapid Specification and Fabrication of Printable Robots*. Book Chapter in Springer STAR series in Robotics, 2015.
- N. Bezzo, and R. Fierro, *A Real World Coordination Framework for Connected Heterogeneous Robotic Systems*. Book Chapter in "Distributed Autonomous Robotic Systems", Springer STAR series in Robotics, vol. 104, pp.75-89, 2014.
- N. Bezzo, R. A. Cortez, and R. Fierro, *Exploiting Heterogeneity in Robotic Networks*. Book Chapter in Springer "Redundancy in Robot Manipulators and Multi-Robot Systems" vol. 57, pp. 53-75, 2013.

- **Miscellaneous Other Conferences:**

- J. Benko, W. Clark, C. Craig, G. Culver, P. Mahan, A. Patel, D. Voce, N. Bezzo, G. Lewin. *Security and Resiliency of Coordinated Autonomous Vehicles*. In IEEE Systems and Information Engineering Design Symposium (SIEDS), pp. 1-6, 2019.
- H. Finegan, S. Jaffe, A. Leon, K. Lytle, E. Morgan, C. Greene, A. Meyer, B. Brinkman, S. De Wekker, H. Yochum, N. Bezzo. *Development of an Autonomous Agricultural Vehicle to Measure Soil Respiration*. In Systems and Information Engineering Design Symposium (SIEDS), pp. 1-6. 2019.

- V. Marquis, R. Ho, W. Rainey, M. Kimpel, J. Ghiorzi, W. Cricchi, N. Bezzo, *Toward attack-resilient state estimation and control of autonomous cyber-physical systems*. In IEEE Systems and Information Engineering Design Symposium (SIEDS), pp. 70-75, 2018 (Best Paper Award).
- R. D. Rosenfeld, M. G. Restrepo, W. H. Gerard, W. E. Bruce, A. A. Branch, G. C. Lewin, N. Bezzo, *Unsupervised surface classification to enhance the control performance of a UGV*. In IEEE Systems and Information Engineering Design Symposium (SIEDS), pp. 225-230, 2018.
- C.A. Wolf, R.P. Hardis, S.D. Woodrum, R.S. Galan, H.S. Wichelt, M.C. Metzger, N. Bezzo, G. C. Lewin, S.F.J. de Wekker, *Wind data collection techniques on a multi-rotor platform*. In IEEE Systems and Information Engineering Design Symposium (SIEDS), pp. 32-37, 2017.
- Z. Calhoun, P. Maribojoc, N. Selzer, L. Procopi, N. Bezzo, C. Fleming, *Analysis of Identity and Access Management alternatives for a multinational information-sharing environment*. In IEEE Systems and Information Engineering Design Symposium (SIEDS), pp. 208-213, 2017.
- M. Pajic, N. Bezzo, I. Lee, *Design and Implementation of Attack-Resilient Cyber-Physical Systems*, In High-Confidence Software and Systems Conference (HCSS), Annapolis, MD, May 2016.
- N. Bezzo, K. Mohta, V. Kumar, I. Lee, *A Run time Monitoring Framework for Safe Coordination of Unmanned Aerial Vehicles* In Safe and Secure Systems and Software Symposium (S5) , Dayton, OH, 10 June 2015

• Workshops:

- E. Yel, N. Bezzo. *Reachability-based Adaptive UAV Scheduling and Planning in Cluttered and Dynamic Environments*. In 2018 Workshop on Informative Path Planning and Adaptive Sampling within IEEE International Conference on Robotics and Automation (ICRA), Brisbane, Australia, May 21-25 2018.
- N. Bezzo, Y. Du, O. Sokolsky, and I. Lee, *A Markovian Approach for Attack Resilient Control of Mobile Robotic Systems*. In Second International Workshop on Robotic Sensor Networks (RSN), Seattle, Washington, April 13, 2015.
- O. Sokolsky, M. Pajic, N. Bezzo, and I. Lee, *Architecture-Centric Software Development for Cyber-Physical Systems*. In First Workshop on Cyber-Physical System Architectures and Design Methodologies (CPSArch), New Delhi, India, October 17, 2014.
- L. Feng, A. L. King, S. Chen, A. Ayoub, J. Park, N. Bezzo, O. Sokolsky, and I. Lee *A Safety Argument Strategy for PCA Closed-Loop Systems: A Preliminary Proposal*. In Medical Cyber Physical Systems Workshop (MedicalCPS), Berlin, Germany, April 14, 2014.
- J. Weimer, N. Bezzo, M. Pajic, G. J. Pappas, O. Sokolsky, and I. Lee, *Resilient Parameter-Invariant Control with Application to Vehicle Cruise Control*. In Workshop on Control of Cyber-Physical Systems, Johns Hopkins University, Baltimore, MD, March 2013.
- N. Bezzo, and R. Fierro, *Mobile Robotic Routers Networks*. In Workshop on Frontiers of Real-World Multi-Robot Systems: Challenges and Opportunities, Duke University, Durham, NC, October 10-11, 2011
- N. Bezzo, P. Cruz, I. Palunko, T. Appel, D. Galarowicz, and R. Fierro, *The MARHES heterogeneous multi robot test bed* . In 1st Southwest Workshop on Cyber-Physical Systems, University of Arizona, Tucson, AZ, March 10-11 2011.

• Demos and Abstract:

- N. Bezzo, J. Park, A. King, P. Gebhard, R. Ivanov, I. Lee, *Demo Abstract: ROSLab – A Modular Programming Environment for Robotic Applications*. Demonstration at the 5th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS, CPSWEEK 2014), Berlin, Germany, April 2014, pp. 214-214.
- M. Pajic, N. Bezzo, J. Weimer, O. Sokolsky, N. Michael, G. J. Pappas, P. Tabuada, and I. Lee, *Demo Abstract: Synthesis of Platform-aware Attack-Resilient Vehicular Systems*. Demonstration at the 4th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS, CPSWEEK 2013), Philadelphia, Pennsylvania, April 2013, pp. 251-251.

- M. Pajic, N. **Bezzo**, J. Weimer, R. Alur, R. Mangharam, N. Michael, G. J. Pappas, P. Tabuada, and I. Lee, *Towards synthesis of platform-aware attack-resilient control systems*. Work-in-Progress Abstract at the 4th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPs, CPSWEEK 2013), Philadelphia, Pennsylvania, April 2013.
- **Posters:**
 - E. Yel, N. **Bezzo** *Reachability-based Self-triggered Scheduling and Replanning of UAV Operations*. Student Research Poster Session, UVA, August 21 2017.
 - A. Branch, H. Dean, N. **Bezzo** *Toward Assisted Robotics Perimeter & Surface Mapping*. Student Research Poster Session, UVA, August 21 2017 (**Best poster award**).
 - V. Saraiya, N. **Bezzo** *Toward Disturbance Rejection Control of Autonomous Aerial Vehicles*. Student Research Poster Session, UVA, August 21 2017.
- **Thesis and Technical Reports**
 - N. **Bezzo** *Coordination Strategies for Connected Robotic Networks*. PhD Thesis, October 2012
 - N. **Bezzo**, J. Piovesan, R. Fierro, *Path Planning of Mobile Routers via Antenna Diversity*, SBIR Report, Marhes Laboratory, School of Electrical Computer Engineering, University of New Mexico, August 2011
 - N. **Bezzo** *Low-Cost CMOS Non-Contact Profilometer*. MS Thesis, July 2008
 - N. **Bezzo** *A Sensors Array for the Measurement of Electrical Currents (in italian – Array di Sensori per la Misura di Correnti Elettriche)*. BS Thesis, July 2006
- **Software Artifacts**
 - N. **Bezzo**, P. Gebhard, J. Park, I. Lee, *ROSLab*: a high-level programming environment for robotic applications <http://precise.github.io/ROSLab/>
 - N. **Bezzo**, P. Gebhard, M. Piccoli, I. Lee, *EMLab*: a high-level co-design environment for PCB electro-mechanical specifications.

Citation Count, H-index and i10-index

- **Google Scholar as of September 21, 2020:**
 - citation count = 709
 - h-index = 12
 - i10-index = 18

Graduate Students

- **Current PhD Students:**
 - Esen Yel (SIE) – Projected Defense in 2021
 - Rahul Peddi (SIE) – Projected Defense in 2022
 - Paul Bonczek (ECE) – Projected Defense in 2022
 - Shijie Gao (ECE) – Projected Defense in 2024
 - Jacob Higgins (ECE) – Projected Defense in 2024
 - Phillip Seaton (ECE) – Projected Defense in 2021
- **Current MS Students:**
 - Christian Gall (ECE) – Exchange student from TUM

- **Former Graduate Students:**

- Mary Margaret Gates (M.S. CS 2020)
- Tony Lin (M.S. ECE 2018) – Now PhD student at Georgia Tech
- Vishaal Saraiya (M.S. MAE 2017) – Now Robotics Engineer at Apellix
- Bradley Hallier (M.S. ECE 2016 -2017)
- Rahul Vasist (UPenn PRECISE Center, M.S. CS 2015) – Now Firmware Engineer at Oracle
- Yanwei Du (UPenn GRASP Lab, M.S. ME 2015) – Now PhD student at Georgia Tech

Undergraduate Students

- **Current BS Students:**

- Noelle Law (ECE) – Projected Graduation in 2021
- Katie Kleeman (ESE) – Projected Graduation in 2021
- Grace Glaubit (ESE/CS) – Projected Graduation in 2021
- Jeremiah Thomas (ESE) – Projected Graduation in 2021

- **Former Undergraduate Students:**

- Nicholas Anselmo (ESE 2020)
- Miller Garrett (ESE 2020)
- Shirley Wang (ECE 2020)
- Ryan Remias (ECE 2020)
- Matthew Trivett (ESE 2020)
- Anders Christoffersen (ECE 2020)
- Rohan Karanth (B.S. CS 2019) – Now Software Engineer at UBER Robotics
- Atiena Branch (B.S. ECE 2018) – Now Software Engineer at Naval Research Lab
- Hazen Dean (B.S. SIE 2018)
- V. Marquis (B.S. SIE 2018)
- R. Ho (B.S. SIE 2018)
- W. Rainey (B.S. SIE 2018)
- M. Kimpel (B.S. SIE 2018)
- J. Ghiorzi (B.S. ECE 2018)
- W. Cricchi (B.S. ECE 2018)
- R. D. Rosenfeld (B.S. CS 2018)
- M. G. Restrepo (B.S. SIE 2018)
- W. H. Gerard (B.S. MAE 2018)
- W. E. Bruce (B.S. ECE 2018)
- Tahiya Salam (B.S. CS 2017) – Now PhD at UPenn
- Neeraj Gandhi (B.S. ECE 2017) – Now PhD at UPenn

Postdoctoral Researchers

- Carmelo Di Franco – 2019

External Funding

- **Awarded (Total = \$1,538,000):**

- *Fly-Crash-Recover: Safe Recovery of Faulty UAVs*; Sponsor: MITRE; Amount: \$ 10,000; Duration: 09/01/2019 – 05/31/2020; Role: PI
- *SaTC: CORE: Small: Online Malicious Intent Inference for Safe CPS Operations under Cyber-attacks*; Sponsor: NSF; Amount: \$ 290,642; Duration: 09/01/2018 – 08/31/2021; Role: PI
- *CRI:II-New: The Living Link Lab: Infrastructure for Enhancing Occupant Experience and Building Operations*; Sponsor: NSF; Amount: \$ 188,000 (Grant total: \$754,568); Duration: 09/01/2018 – 08/31/2021; Role: Co-PI
- *Integrated Static and Dynamic Approaches to High-Assurance for Learning-Enabled Cyber-Physical Systems*; Sponsor: DARPA Assured Autonomy Program; Amount: \$ 500,000 (Grant total: \$4,000,000); Duration: 01/01/2018 – 03/31/2022; Role: Co-PI
- *Assured Planning and Control of Heterogeneous Robotics Systems*; Sponsor: LEIDOS; Amount: \$ 100,000 ; Duration: 09/01/2018 – 08/31/2021; Role: PI
- *FPV autonomous drone flight*; Sponsor: MITRE; Amount: \$ 50,000 ; Duration: 09/01/2018 – 12/31/2018; Role: PI
- *Development of Risk-based Attack Resilient State Estimation and Control of CPS* Sponsor: Booz Hallen Hamilton; Amount: \$ 10,000; Duration: 08/21/2017 – 05/30/2018; Role: PI
- *Development of Control-Aware Cyber Techniques for Attack-Resilient Industrial Control & Combat Systems* Sponsor: ONR BAA: N00014-16-R-BA04; Amount: \$ 320,000 (Grant total:\$2,700,000); Duration:10/01/2016 – 09/30/2020; Role: Co-PI
- *CRITICAL Information and Infrastructure Identity and access Management Evaluation (CRII-IME)* Sponsor: MITRE; Amount: \$ 10,000; Duration: 09/01/2016 – 05/30/2017; Role: PI
- *Attack-Resilient Autonomous Vehicles* Sponsor: DARPA FA8750-12-2-0247 High-Assurance Cyber Military Systems (HAMCS) Program; Amount:\$ 50,000; Duration: 01/01/2016 – 02/28/2017; Role: Co-PI

Internal Funding

- **Awarded:**

- *Towards Learning Enabled Autonomous Infrastructure Inspection* UVA Internal Research Innovation Award; Duration: 7/1/2019 – 6/30/2020; Amount: \$ 60,000
- *Enabling Robotic Operations in the Real World: A Cloud-based Visible Light Communication Approach* UVA Internal Research Innovation Award; Duration: 6/1/2017 – 8/30/2018; Amount: \$ 75,000
- *Using flow models to improve quadrotors control and motion-planning* UVA Internal Research Innovation Award; Duration: 6/1/2017 – 8/30/2018; Amount: \$ 50,000
- *Fully Autonomous Secure and Safe Transport (FASST)* UVA Internal Cyber-security Initiative Award; Duration: 08/29/2016 – 05/15/2017; Amount: \$ 100,000
- *Cybersecurity Analysis - Cooperative Adaptive Cruise Control* UVA Internal Cyber-security Initiative Award; 08/29/2016 – 05/15/2017; Amount: \$ 60,000
- *Graduate Curriculum in Robotics and Society* UVA Internal Education Innovation Award; 06/09/2016 – 05/15/2017; Amount: \$ 80,000

Presentations

- Presentation at ICRA Workshop on Security and Privacy for Robotics, Paris, France, 27 May 2020
- Presentation at University of Minnesota, DNN-based Verified Fast Run-Time Monitoring of Autonomous Systems , Minneapolis, MN, 16 March 2019
- Presentation at Galois, Toward Resilient & Assured Autonomous CPS, Portlan, OR, 19 December 2018

- Presentation at UC Berkeley, *Fast Run-Time Monitoring of Autonomous Systems*, Berkeley, CA, 28 November 2018
- Presentation at the 2018 Accelerated Master's Program in Systems Engineering Seminar, *Toward Resilient & Assured Autonomous CPS*, Darden School, UVA, Charlottesville, VA, 21 September 2018
- Presentation and Tutorial on CPS-cybersecurity to the Defense Intelligence Agency (DIA), UVA, Charlottesville, VA, 06 September 2017
- Presentation at the 2016 Jacobs Technology Days and the Hampton Roads Unmanned Systems Opportunity Exchange *Unmanned Systems Workforce*, Hampton, VA, 22 April 2016
- Presentation at the 2015 Safe and Secure Systems and Software Symposium (S5) *A Run time Monitoring Framework for Safe Coordination of Unmanned Aerial Vehicles*, Dayton, OH, 10 June 2015
- Invited speaker at NASA Jet Propulsion Laboratory, Pasadena, CA, 12 April 2013.
- Invited speaker at USC Robotics Research Lab, Los Angeles, CA, 13 April 2012.

Internal Service

- **School Level:**
 - Member of the Link Lab, 2018, 2017
 - Member of the Cyber-Security Search Committee, 2018, 2017
 - Member of the Link Lab CPS Search Committee, 2018, 2016
 - Co-organizer of the Link Lab Opening Ceremony, 2018 (Presentation on CPS Autonomy, Demonstrations, and Drone Ribbon-Cutting)
 - Panelist at Undergraduate Research Network's Research Fair, 2018
 - Demonstrations to Industry and Government visitors, 2016 - present
 - Judge for URN Research Symposium, 2016
 - PhD Committee Member:
 - * Trent Weiss, CS, 2019
 - * Steven Hauser, ESE, 2019
 - * Yu Sheng, ECE, 2018
 - * Dawei Fan, ECE, 2018
 - * Masoud Bashiri, SIE, 2017
 - * Jihanyu Su, SIE, 2017
 - * Xiaomin Lin, SIE, 2017
- **Department Level:**
 - Member of the Systems & Information Engineering Graduate Studies Committee, 2016 - present
 - Member of the Computer Engineering Graduate Studies Committee, 2019 - present
 - Open-House Lab demonstrations, 2016 - present

Professional Service

- **Journals, Conferences, and Workshops Organization:**
 - Area Chair of Conference on Robot Learning (CoRL) – 2020
 - Program Committee Member of International Conference on Cyber-Physical Systems – 2020
 - Program Committee Member of International Conference on Intelligent Robots and Systems – 2020

- Session Chair at the International Conference on Intelligent Robots and Systems (IROS) - Scheduling and Planning Session – 2019.
- Guest Editor of IEEE Computer Special Issue on Resiliency in Cyber-Physical Systems – 2019, 2018
- Program Committee Member of International Conference on Cyber-Physical Systems – 2019, 2018, 2017
- Session Chair at the International Conference on Cyber-Physical Systems (ICCPS) - Autonomous Vehicles Session – 2018.
- Program Committee Member American Control Conference – 2018
- Session Chair at the American Control Conference (ACC) - Machine Learning Session and Robotics Session – 2018.
- Organizer of the "Robot Makers: The future of digital rapid design and fabrication of robots" (RoMa) workshop within the Robotics: Science and Systems (RSS) Conference – 2016, 2014
- Session Chair at the 2017 Adaptive Hardware and Systems Conference (AHS) - Robotics Session – 2017.
- Session Chair at the 2016 American Control Conference (ACC) - Quadrotors and UAVs Session – 2016.
- Session Chair at the 2016 International Design Engineering Technical Conferences & Computer & Information in Engineering Conference (IDETC/SIE) - Co-design Session – 2015.
- Session Chair of 2014 International Symposium of Experimental Robotics (ISER) - Mechanisms Session – 2014.

● **Reviewer for:**

- IEEE Transactions on Automation Science and Engineering;
- IEEE Transactions on Robotics;
- IEEE Control Systems Magazine;
- IEEE Robotics and Automation Magazine;
- IEEE/ASME Transactions on Mechatronics;
- Cambridge Robotica;
- ACTA Press International Journal of Robotics and Automation;
- American Control Conference (ACC);
- International Conference on Robotics and Automation (ICRA);
- International Conference on Intelligent Robots and Systems (IROS);
- Conference on Decision and Control (CDC)
- International Conference of Cyber-Physical Systems (ICCPS)

● **Member of:**

- IEEE (Control Systems Society, Robotics and Automation Society, and Communications Society).