

RAFFAELLO D'ANDREA¹

www.raffaello.name

EDUCATION

Ph.D., California Institute of Technology, Electrical Engineering. 1997.
M.S., California Institute of Technology, Electrical Engineering. 1992.
B.Sc., University of Toronto, Engineering Science. 1991.

APPOINTMENTS

Founder, CEO, and Chairman, Verity Studios. Since 2014.
Co-Founder, Robo Global Investments and Exchange Traded Funds. Since 2013.
Chief Technical Advisor, Kiva Systems. 2008-2012.
Professor of Dynamic Systems and Control, ETH Zurich. Since 2007.
Co-Founder, Kiva Systems. 2003-2007.
Associate Professor (on leave), Mechanical and Aerospace Engineering, Cornell University. 2003 - 2007.
Assistant Professor, Mechanical and Aerospace Engineering, Cornell University. 1997 - 2003.

AWARDS AND HONORS

IEEE Robotics and Automation Award. 2016.
Engelberger Robotics Award for Technology. 2015.
Best Paper Award, IFAC Mechatronics Journal. 2014.
Transformative Achievement Award, Society for Design and Process Science. 2012.
Best Interactive Paper Prize, IFAC World Congress. 2011.
Golden Owl Teaching Prize, Mechanical and Process Engineering, ETH Zurich. 2010.
Best Paper Award Finalist, IEEE International Conference on Robotics and Automation. 2010.
IEEE Fellow. 2010.
IEEE-IFR Invention and Entrepreneurship Award in Robotics and Automation. 2008.
Prix Ars Electronica - Honorary Mention: The Robotic Chair. 2006.
Cornell University Provost Award for Distinguished Scholarship. 2006.
Robert '55 and Vanne '57 Cowie Excellence in Teaching Award, Cornell College of Engineering. 2005.
RoboCup World Champions, F180 League, Systems Architect and Faculty Advisor. Padova, Italy. 2003.
RoboCup World Champions, F180 League, Systems Architect and Faculty Advisor. Fukuoka, Japan. 2002.
Presidential Early Career Award for Scientists and Engineers (PECASE). 2001.
Vida Life 4.0 Art & Artificial Life International Competition - Honorary Mention: The Table. 2001.
CAREER Award, National Science Foundation. 2000.
RoboCup World Champions, F180 League, Systems Architect and Faculty Advisor. Melbourne, Australia. 2000.
J.P. and Mary Berger '50 Excellence in Teaching Award, Cornell College of Engineering. 2000.
D. G. Shepherd Teaching Prize, Sibley School of Mechanical and Aerospace Engineering. 1999.
RoboCup World Champions, F180 League, Systems Architect and Faculty Advisor. Stockholm, Sweden. 1999.
Best Student Paper Award, IEEE Conference on Decision and Control. 1996.
O. Hugo Schuck Best Paper Award, AACC American Control Conference. 1994.
Natural Sciences and Engineering Research Council of Canada 1967 Fellow. 1991-1996.
University of Toronto Wilson Medal. 1991.
Valedictorian, Anderson CVI. 1986.

KEYNOTES, PLENARIES, AND SELECT SPEAKING ENGAGEMENTS

ECE Distinguished Lecture Series, Queens University, 2018.
Nyquist Lecture, Yale University, 2018.
Kelly Distinguished Lecture on Robots and Jobs, Georgia Tech, 2017.
Keynote Speaker, Mediterranean Conference on Control and Automation, 2017.
Keynote Speaker, Digital Big Bang Thailand, 2017.
Keynote Speaker, T-Edge Beyond The Impossible Conference. 2016.
Keynote Speaker, Seoul Future Conference. 2016.
Glass Memorial Lecture Series, University of Toronto. 2016.
Presenter, TED. 2016.

¹July 26, 2018

Plenary Speaker, Indian Control Conference. 2016.
 LAUNCH Distinguished Lecture Series, University of Illinois. 2015.
 Keynote Speaker, Swiss Energy Climate Summit. 2015.
 Invited Speaker, USI. 2015.
 Keynote Speaker, GOTO Amsterdam. 2015.
 Invited Speaker, European Trend Day, GDI.
 Keynote Speaker, Microsoft Research Devices and Networking Summit. 2015.
 Presenter, DLD Conference. 2015.
 Presenter, Zurich.Minds. 2014.
 University California Santa Barbara “Engineering the Future” Lectureship. 2014.
 Crocco Colloquium, Princeton University. 2014.
 Keynote Speaker, International Conference on Simulation, Modeling, and Programming for Autonomous Robots. 2014.
 Keynote Speaker, Canadian Conference on Computer and Robot Vision. 2014.
 Keynote Speaker, ACM Symposium on User Interface Software and Technology. 2013.
 Invited Speaker, Rome Maker Faire - The European Edition. 2013.
 Invited Speaker, RoboCup International Symposium. 2013.
 Invited Speaker, Robotics Science and Systems. 2013.
 Presenter, TED Global. 2013.
 Keynote Speaker, Engineering Science Education Conference, University of Toronto. 2013.
 Presenter, Zurich.Minds. 2012.
 Keynote Speaker, Society for Design and Process Science. 2012.
 Keynote Speaker, International Symposium on Software Engineering for Adaptive and Self-Managing Systems. 2012.
 Invited Speaker, The Art of Robots, Robots Among Us Series, Swissnex San Francisco. 2011.
 Invited Speaker, 10th International Symposium on Distributed Autonomous Robotic Systems. 2010.
 Plenary Speaker, IEEE International Conference on Robotics and Automation. 2010.
 University of Texas at Dallas Center for Values in Medicine, Science, and Technology Lecture Series. 2010.
 Invited Speaker, IFAC Workshop on Estimation and Control of Networked Systems. 2009.
 Plenary Speaker, NIST Workshop on Performance Metrics for Intelligent Systems. 2009.
 Invited Speaker, International Symposium of Robotics Research (ISRR). 2009.
 Keynote Speaker, Philips Conference on Applications of Control Technology. 2009.
 Presenter, DLD Conference. 2009.
 Dean’s Distinguished Lecture Series, Faculty of Engineering, Yale University. 2008.
 Tetelman Lecture, Yale University. 2008.
 Keynote Speaker, International Conference on Robot Communication and Coordination. 2007.
 Plenary Speaker, Northeast Control Workshop. 2007.
 Plenary Speaker, Conference on Cellular Automata for Research and Industry. 2006.
 Presenter, ideaCity. 2006.
 College of Engineering Distinguished Speaker Series, Rochester Institute of Technology. 2005.
 Invited Speaker, the Engineering Academy of Japan International Symposium. 2004.
 Plenary Speaker, Robot Motion Control Conference. 2004.
 Air Force Rome Laboratories Information Institute’s Frontiers in Information Sciences Distinguished Lecture Series. 2004.
 Invited Speaker, SpoletoScienza, Spoleto Festival. 2003.
 Plenary Speaker, American Control Conference. 2003.
 Keynote Speaker, University of Toronto Engineering Science Annual Dinner. 2003.
 Special Topic Invited Speaker, Mathematical Theory of Networks and Systems Conference. 2002.
 Plenary Speaker, SIAM Conference on Control and its Applications. 2001.
 Sigma Series Public Lecture and Colloquium, NASA Langley Research Center. 2001.
 Invited Speaker, National Science Foundation Research Highlight Series. 2001.
 Evening Plenary Speaker, IEEE Conference on Decision and Control. 2000.

INVITED LECTURES AND SEMINARS

Digital Brainstorming Us & Them, Switzerland. November 2016.
 ETH Zurich, Morari Fest, Switzerland. May 2016.
 Disrupting Mobility Global Summit, USA. November 2015.
 Princeton University, Lewis Center for the Arts, USA. November 2014.
 University College London, Bartlett School of Architecture International Lecture Series, UK. November 2012.
 Intelligent City Salon, Berlin, Germany. May 2012.
 Carnegie Mellon, Robotics Institute, USA. February 2012.
 University of Pennsylvania, GRASP Laboratory, USA. January 2012.
 Autodesk, Waltham, USA. August 2011.
 SwissNex Boston, USA. August 2011.
 Google Inc., USA. April 2011.
 University of California Berkeley, Art, Technology, & Culture Colloquium, USA. April 2011.
 Stanford University, Information Systems Colloquium, USA. October 2010.

University of California Berkeley, Electrical Engineering and Computer Science Seminar, USA. October 2010.
 University of Southern California, Engineering, Neuroscience & Health Seminar, USA. October 2010.
 California Institute of Technology, Information Science and Technology Seminar, USA. October 2010.
 University of Toronto, Systems Control Group Seminar, Canada. May 2010.
 University of California, Santa Barbara, Mechanical Engineering Seminar, USA. February 2010.
 ETH Zurich, Optimization and Applications Seminar, Switzerland. May 2009.
 Google Zurich, Switzerland. April 2009.
 ABB Corporate Research, Switzerland. March 2009.
 Eindhoven University of Technology, Department of Mechanical Engineering, the Netherlands. February 2009.
 University of Illinois at Urbana Champaign, Electrical and Computer Engineering Department. December 2008.
 ETH Zurich, Institute of Neuroinformatics, Switzerland. October 2008.
 University of Waterloo, Electrical and Computer Engineering Department, Canada. October 2008.
 University of Toronto, Electrical and Computer Engineering, Canada. October 2008.
 Lund Institute of Technology, Department of Automatic Control, Sweden. September 2008.
 Stuttgart University, Kolloquium Technische Kybernetik, Germany. June 2008.
 University of Padova, Dipartimento di Ingegneria dell'Informazione, Italy. May 2008.
 EPFL, Automatic Control Laboratory, Switzerland. April 2008.
 Tufts University, Department of Mechanical Engineering, USA. November 2007.
 Universidad ORT Uruguay, La Facultad de Ingeniera, Uruguay. December 2006.
 Massachusetts Institute of Technology, Department of Aeronautics and Astronautics, USA. May 2006.
 Cornell University, Computer Science Department, USA. February 2006.
 University of Toronto, Engineering Science Education Conference Feature Speaker, Canada. February 2006.
 ETH Zurich, Automatic Control Seminar, Switzerland. January 2006.
 Massachusetts Institute of Technology, Laboratory for Information and Decision Systems, USA. September 2005.
 Cornell University, Johnson School of Management, USA. April 2005.
 Boston University, Electrical and Computer Engineering Department, USA. March 2005.
 Charles Stark Draper Laboratory, USA. January 2005.
 Tokyo Institute of Technology, Department of Control and Systems Engineering, Japan. October 2004.
 Tokyo Denki University, Japan. October 2004.
 ETHZ, Automatic Control Seminar, Switzerland. September 2004.
 Lund Institute of Technology, Department of Automatic Control, Sweden. May 2004.
 Cornelia Street Cafe, Roald Hoffmann's Entertaining Science Cabaret: The Engineer and the Artist, USA. May 2004.
 NSF Workshop for High School Teachers and Students for Maui District, USA. December 2003.
 University of Pennsylvania, Mechanical Engineering and Applied Mechanics Department, USA. November 2003.
 Stanford University, Aerospace Engineering Department, USA. September 2003.
 Charles River Analytics, USA. August 2003.
 University of Padova, Dipartimento di Ingegneria dell'Informazione, USA. July 2003.
 University of Illinois at Urbana Champaign, Aeronautical and Astronautical Engineering Department, USA. April 2003.
 Vanderbilt Electrical Engineering and Computer Science Lecture Series, USA. November 2002.
 National Gallery of Canada, Public Lecture (with artist Max Dean), Canada. October 2002.
 Massachusetts Institute of Technology, The Center for Bits and Atoms, USA. October 2002.
 University of Florida, Research Institute for Autonomous Precision Guided Systems, USA. May 2002.
 GRASP Laboratory, University of Pennsylvania, Philadelphia, Pennsylvania. May 2002.
 AFOSR Workshop on Future Directions in Control, Arlington, Virginia. April 2002.
 Invited Speaker, National Science Foundation, National Engineers Week, Arlington, Virginia. February 2002.
 University of California, Santa Barbara, Mechanical and Environmental Engineering. January 2001.
 Lund Institute of Technology, Department of Automatic Control, Sweden. June 2000.
 ETH Zurich, Automatic Control Seminar, Switzerland. June 2000.
 EPFL Lausanne, Autonomous System Lab, Switzerland. June 2000.
 NSF Workshop for High School Teachers of Mathematics and Science, Chicago, IL. June 2000.
 Lucent Technologies, Murray Hill, New Jersey. May 2000.
 University of California, San Diego, Mechanical and Aerospace Engineering. May 2000.
 California Institute of Technology, Mechanical Engineering, Pasadena, CA. March 2000.
 IEEE Industrial Robotics and Automation Seminar, Binghamton University, NY. February 2000.
 California Institute of Technology, Control and Dynamical Systems, Pasadena, CA. November 1999.
 Princeton University, Mechanical and Aerospace Engineering, Princeton, NJ. October 1999.
 Yale University, Electrical Engineering, New Haven, CT. September 1999.
 Universal Instruments Corporation, Binghamton, NY. September 1999.
 Wright Patterson Air Force Base, Air Vehicles Directorate, Dayton, OH. July 1999.
 University of Toronto, Canada, Electrical and Computer Engineering. April 1999.
 Colorado State University, Electrical and Computer Engineering, Fort Collins, CO. March 1999.
 University of California, Los Angeles, Mechanical and Aerospace Engineering. March 1999.
 University of California, Santa Barbara, Center for Control Engineering and Computation. March 1999.
 Massachusetts Institute of Technology, Laboratory for Information and Decision Systems, Boston, MA. February 1999.
 Xerox Distinguished Lecture Series in Control and Diagnostics, Webster, NY. November 1998.
 University of Michigan, Mechanical Engineering, Ann Arbor, MI. October 1998.

University of California, Berkeley, Mechanical Engineering. December 1996.
University of California, Los Angeles, Mechanical and Aerospace Engineering. December 1996.
University of California, Santa Barbara, Electrical Engineering. November 1996.
Massachusetts Institute of Technology, Laboratory for Information and Decision Systems, Boston, MA. August 1996.
Cornell University, Mechanical and Aerospace Engineering, May 1996.
Texas A & M University, Mechanical Engineering. April 1996.
University of Minnesota, Aerospace Engineering. April 1996.
University of Illinois at Chicago, Mechanical Engineering. March 1996.
McGill University, Canada, Electrical Engineering. May 1995.
University of Toronto, Canada, Electrical and Computer Engineering. May 1995.
University of Padova, Italy, Systems and Mathematics. October 1994.
University of Groningen, Mathematics Institute, System Theory Group, the Netherlands. September 1994.

SHOWS, EXHIBITIONS, AND DEMONSTRATIONS

Synthetic Swarm, Flying Machine Design and Choreography (with Verity Studios)

1977 - Royal Caribbean's Symphony of the Seas. March 2018 - present.
Starlight Express, Bochum, Germany. May 2018 - present.
RSA Conference, San Francisco, USA. April 2018.
Circus Knie, Switzerland. February 2018 - present.
Hello Kitty Christmas Show, Changi Airport, Singapore. November 2017 - December 2017.
Knicks pre-game show, Madison Square Garden, New York, USA. September 2017 - May 2018.
Metallica Worldwired tour. October 2017 - present.
2047 Apologue, Beijing, China. June 2017.
Fantastic Journey, Princess Cruises. April 2017 - present.
ABB 125 Year Anniversary Gala Event, Baden, Switzerland. October 2016.
Cirque du Soleil's PARAMOUR on Broadway, New York, USA. April 2016 - April 2017.

Meet the Dazzling Flying Machines of the Future (with Verity Studios and IDSC²)

TED, Vancouver, Canada. February 2016.
Zurich.Minds, Zurich, Switzerland. November 2014.

Flying Machine Arena (with IDSC)

"Sparked", Cirque du Soleil. September 2014.
TED Global, Edinburgh, Scotland. June 2013.
Zurich.Minds, Zurich, Switzerland. December 2012.
Google IO, San Francisco, USA. June 2012.
Hannover Messe, Hannover, Germany. April 2012.

Flight Assembled Architecture (with IDSC and Gramazio & Kohler)

FRAC Centre, Orleans, France. December 2011 - February 2012.

Balancing Cube (with Sebastian Trimpe/IDSC)

IFAC World Congress, Milan, Italy. August 2011.
Festival Della Scienza, Genoa, Italy. October 2009.
Nacht der Forschung, Zurich, Switzerland. September 2009.

Blind Juggler (with Philipp Reist/IDSC)

Exploratorium, San Francisco, USA. November 2011.
Museum for Communication, Berlin, Germany. May - September 2010.
Heinz Nixdorf Museum, Paderborn, Germany. November 2009 - March 2010.
Festival Della Scienza, Genoa, Italy. October 2009.
Robodays, Odense, Denmark. September 2009.
Nacht der Forschung, Zurich, Switzerland. September 2009.

Robotic Chair (with Max Dean and Matt Donovan)

Nuit Blanche, Gardiner Museum, Toronto, Canada. September 2012.
Sonar 2010, Barcelona, Spain. June 2010.
Red Deer Museum and Art Gallery, Red Deer, Canada. February - April 2010.
Ronald Feldman Fine Arts, New York, USA. January - February 2010.
Cabaret Voltaire, Zurich, Switzerland. March 2009.
London Art Fair, London, England. January 2009.
National Gallery of Canada, Ottawa, Canada. October 2008 - February 2009.
Ottawa Art Gallery, Ottawa, Canada. November 2008.
Flowers Gallery, London, England. July - August 2008.
Contemporary Art Gallery, Vancouver, Canada. June - August 2008.
Mois Multi, Quebec City, Canada. February 2008.

²Institute for Dynamic Systems and Control, ETH Zurich.

Yale School of Art, Yale University, New Haven, USA. January 2008.
Open Spaces, Toronto International Art Fair, Canada. October 2007.
Luminato Festival, Toronto, Canada. June 2007.
International Contemporary Art Fair of Madrid (ARCO), Spain. February 2007.
Ars Electronica, Linz, Austria. September - October 2006.
ideaCity, Toronto, Canada. June 2006.

Table (with Max Dean)

National Gallery of Canada, Ottawa, Canada. October 2008 - February 2009.
National Gallery of Canada, Ottawa, Canada. October 2002 - February 2003.
Biennale di Venezia, Venice, Italy. June - October 2001.

Cornell Autonomous Robot Soccer Team

Festival dei Due Mondi, Spoleto, Italy. July 2003.
Tech Museum of Innovation, San Jose, USA. January 2001.
Smithsonian, Washington, USA. December 1999.

COLLECTIONS

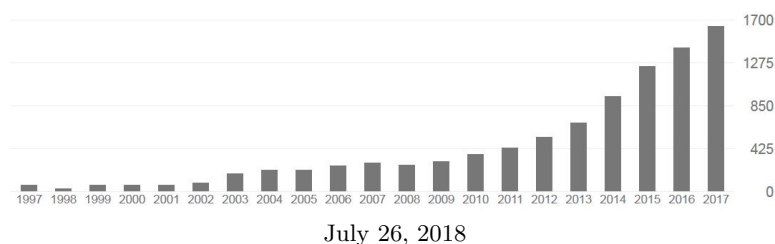
Museum Tinguely, Basel, Switzerland. Robotic Chair, 2016.
FRAC Centre, Orleans, France. Flight Assembled Architecture, 2011.
Heinz Nixdorf Museum, Paderborn, Germany. Blind Juggler, 2009.
National Gallery of Canada, Ottawa, Canada. Robotic Chair, 2006.
National Gallery of Canada, Ottawa, Canada. Table, 2003.

PUBLICATIONS

15 REPRESENTATIVE PUBLICATIONS

- [1] M. Muehlebach and R. D'Andrea. The flying platforma testbed for ducted fan actuation and control design. *Mechatronics*, 42:52–68, 2017.
- [2] G. Mohanarajah, D. Hunziker, R. DAndrea, and M. Waibel. Rapyuta: A Cloud Robotics Platform. *IEEE Transactions on Automation Science and Engineering*, 12:481–493, 2015.
- [3] R. D'Andrea. Guest Editorial: Can Drones Deliver? *IEEE Transactions on Automation Science and Engineering*, 11(3):647–648, 2014.
- [4] F. Augugliaro, S. Lupashin, M. Hamer, C. Male, M. Hehn, M. Mueller, J. Willmann, F. Gramazio, M. Kohler, and R. D'Andrea. The Flight Assembled Architecture Installation: Cooperative Construction with Flying Machines. *IEEE Control Systems Magazine*, pages 46–64, 2014.
- [5] S. Lupashin, M. Hehn, M. W. Mueller, A. P. Schoellig, M. Sherback, and R. DAndrea. A Platform for Aerial Robotics Research and Demonstration: the Flying Machine Arena. *Mechatronics*, pages 41–54, 2014.
- [6] P. Wurman, R. D'Andrea, and M. Mountz. Coordinating hundreds of cooperative, autonomous vehicles in warehouses. *AI Magazine*, 29(1):9–19, 2008.
- [7] M. Gajamohan, M. Merz, I. Thommen, and R. D'Andrea. The Cubli: A Cube that can Jump Up and Balance. In *IEEE International Conference on Intelligent Robots and Systems*, pages 3722–3727, 2012.
- [8] S. Trimpe and R. D'Andrea. The Balancing Cube: A Dynamic Sculpture As Test Bed for Distributed Estimation and Control. *IEEE Control Systems Magazine*, 32:48–75, 2012.
- [9] P. Reist and R. D'Andrea. Design and Analysis of a Blind Juggling Robot. *IEEE Transactions on Robotics*, 28(6):1228–1243, 2012.
- [10] R. D'Andrea. Guest editorial: A Revolution in the Warehouse: A retrospective on Kiva Systems and the Grand Challenges Ahead. *IEEE Transactions on Automation Science and Engineering*, 9(4):638–639, 2012.
- [11] R. Oung and R. D'Andrea. The Distributed Flight Array. *Mechatronics*, 21:908–917, 2011.
- [12] M. Earl and R. D'Andrea. Iterative MILP Methods for Vehicle Control Problems. *IEEE Transactions on Robotics*, 21(6):1158–1167, 2005.
- [13] T. K. Nagy, R. D'Andrea, and P. Ganguly. Near-Optimal Dynamic Trajectory Generation and Control of an Omnidirectional Vehicle. *Robotics and Autonomous Systems*, 46:47–64, 2004.
- [14] R. D'Andrea and G. E. Dullerud. Distributed Control Design for Spatially Interconnected Systems. *IEEE Transactions on Automatic Control*, 48(9):1478–1495, 2003.
- [15] R. D'Andrea. Generalized L2 Synthesis. *IEEE Transactions on Automatic Control*, 44(6):1145–1156, 1999.
- [16] R. D'Andrea, R. L. Behnken, and R. M. Murray. Rotating Stall Control of an Axial Flow Compressor using Pulsed Air Injection. *Journal of Turbomachinery*, 119(4):742–752, 1997.

GOOGLE SCHOLAR CITATIONS



15 REPRESENTATIVE ISSUED PATENTS

1. CONTROLLED FLIGHT OF A MULTICOPTER EXPERIENCING A FAILURE AFFECTING AN EFFECTOR.
2. FLYING CAMERA WITH STRING ASSEMBLY FOR LOCALIZATION AND INTERACTION.
3. METHODS AND SYSTEMS FOR SCHEDULING THE TRANSMISSION OF LOCALIZATION SIGNALS AND OPERATING SELF-LOCALIZING APPARATUS.
4. TRANSPORTING INVENTORY ITEMS USING MOBILE DRIVE UNITS AND CONVEYANCE EQUIPMENT.
5. MANEUVERING A MOBILE DRIVE UNIT.
6. GENERATING A PATH FOR A MOBILE DRIVE UNIT.
7. SYSTEM AND METHOD FOR MANEUVERING A MOBILE DRIVE UNIT.
8. METHOD AND SYSTEM FOR TRANSPORTING INVENTORY ITEMS.
9. SYSTEM AND METHOD FOR INVENTORY MANAGEMENT USING MOBILE DRIVE UNITS.
10. SYSTEM AND METHOD FOR GENERATING A PATH FOR A MOBILE DRIVE UNIT.
11. SYSTEM AND METHOD FOR COORDINATING MOVEMENT OF MOBILE DRIVE UNITS.
12. METHOD AND SYSTEM FOR TRANSPORTING INVENTORY ITEMS.
13. SYSTEM AND METHOD FOR MANAGING MOBILE DRIVE UNITS.
14. SYSTEM AND METHOD FOR POSITIONING A MOBILE DRIVE UNIT.
15. INVENTORY SYSTEM WITH MOBILE DRIVE UNIT AND INVENTORY HOLDER.

SELECT RESEARCH GRANTS

PRINCIPAL INVESTIGATOR

Extending the Capabilities of Small Autonomous Flying Vehicles

Swiss National Science Foundation. January 2016 - December 2019.

Approximate Model Predictive Control

ETH Independent Investigator Research Award. January 2016 - December 2018.

Distributed Estimation and Control of Mechatronic Systems

Swiss National Science Foundation. February 2014 - January 2018.

Aerial Construction

ETH Independent Investigator Research Award. September 2012 - August 2015.

Control of Underactuated Systems Composed of Subsystems with Identical Dynamics

ETH Independent Investigator Research Award. September 2011 - August 2014.

High Performance Maneuvers and Trajectory Generation for Quadrotor Flying Vehicles

Swiss National Science Foundation. October 2011 - September 2014.

Optical Motion Capture System for Robot Experiments in Real World Environments

Swiss National Science Foundation. December 2011 - November 2012.

Distributed Estimation and Control of Mechatronic Systems

Swiss National Science Foundation. November 2009 - October 2012.

Design of Robust, Networked Control Systems via Convex Optimization

US National Science Foundation. November 2003 - October 2006.

Control of Vehicle Swarms

US Air Force Office of Scientific Research, PECASE Award. May 2002 - December 2007.

Control of Spatially Interconnected Systems, with Application to Coordinated Vehicle Control

US Air Force Office of Scientific Research. October 2000 - September 2003.

Robust and Optimal Control of Interconnected Systems

US National Science Foundation. July 2000 - June 2004.

Experimental Model-Based Control Design Using Multibody Codes

US National Science Foundation. June 1998 - May 2000.

Synthesis Methods for Distributed and Time Varying Controlled Systems

US Air Force Office of Scientific Research. April 1998 - November 2000.

Reduced Order Modeling and Control of Systems Subject to Fluid-Structure Interactions

US Air Force Office of Scientific Research. March 1998 - August 1999.

CO-PRINCIPAL INVESTIGATOR

EuRoC: European Robotics Challenges

European Research Council. January 2014 - December 2017.

NCCR Digital Fabrication

Swiss National Science Foundation. July 2014 - December 2015.

RoboEarth: Robots Sharing a Knowledge Base for World Modeling and Learning of Actions

European Research Council. January 2010 - December 2013.

Layered Fault Management Architectures

DARPA. September 2002 - August 2003.

Human Centered, Variable Initiative Control of Complex Automa-Teams

DARPA. September 2001 - September 2003.

Mixed Initiative Control of Automa-Teams

DARPA. September 2001 - December 2003.

Cooperative Control in Uncertain, Adversarial Environments

US Air Force Office of Scientific Research Multi-Disciplinary University Research Initiative. May 2001 - April 2006.

A Practical Method to Predict and Control Non-linear Aeroelasticity

US Department of Defense. August 1999 - August 2000.

Three-Axis satellite Attitude Control Using Only Magnetic Torquers

US Air Force Office of Scientific Research. April 1999 - March 2000.

MENTORING

Ph.D.

Carmelo Sferrazza, Ph.D., ETH Zurich. Since 2017.

Matthias Hofer, Ph.D., ETH Zurich. Since 2017.

Rajan Gill, Ph.D., ETH Zurich. Since 2016.

Weixuan Zhang, Ph.D., ETH Zurich. Since 2015.

Anton Ledergerber, Ph.D., ETH Zurich. Since 2015.

Mike Hamer, Ph.D., ETH Zurich. Since 2014.

Dario Brescianini, Ph.D., ETH Zurich, 2018.

Michael Muehlebach, Ph.D., ETH Zurich, 2017.

Robin Ritz, Ph.D., ETH Zurich, 2017.

Max Kriegleder, Ph.D., ETH Zurich, 2017.

Federico Augugliaro, Ph.D., ETH Zurich, 2015.

Mark Muller, Ph.D., ETH Zurich, 2015.

Philipp Reist, Ph.D., ETH Zurich, 2015.

Gajamohan Mohanarajah, Ph.D., ETH Zurich, 2014.

Markus Hehn, Ph.D., ETH Zurich, 2014.

Sergei Lupashin, Ph.D., ETH Zurich, 2013.

Raymond Oung, Ph.D., ETH Zurich, 2013.

Sebastian Trimpe, Ph.D., ETH Zurich, 2013.

Angela Schoellig, Ph.D., ETH Zurich, 2012.

Michael Sherback, Ph.D., Cornell University, 2009.

Oliver Purwin, Ph.D., Cornell University, 2008.

Ramu Chandra, Ph.D., Cornell University, 2005.

Jeffrey Fowler, Ph.D., Cornell University, 2005.

Cedric Langbort, Ph.D., Cornell University, 2004.

Matthew Earl, Ph.D., Cornell University, 2004.

Post-Doctoral

Dr. Luca Gherardi. 2013 - 2014.
Dr. Markus Waibel. 2010 - 2014.
Dr. Michael Sherback. 2009 - 2010.
Dr. Frederic Bourgault. 2008 - 2010.
Dr. Guillaume Ducard. 2008 - 2009.
Dr. Keyong Li. 2005 - 2007.
Dr. Venkatesh Rao. 2004 - 2006.
Dr. JinWoo Lee. 1998 - 1999, 2001 - 2006.
Dr. Myungsoo Jun. 2001 - 2004.
Dr. Tama's Kalma'r Nagy. 2001 - 2002.

High-Profile Talks

Lea Pereyre, World.Minds 2016.
Federico Augugliaro, TEDx 2016.
Angela Schoellig, TEDx 2016.
Max Kriegleder, TEDx 2015.
Gajan Mohanarajah, TEDx 2014.
Markus Hehn, TEDx 2014.
Sergei Lupashin, TED 2014.
Mark Muller, TEDx 2014.
Federico Augugliaro, BUILDx 2014.
Raymond Oung and Max Kriegleder, World.Minds 2013.
Gajan Mohanarajah, World.Minds 2013.
Philipp Reist, World.Minds 2011.
Geo Robson, World.Minds 2009.
Sergei Lupashin, World.Minds 2008.

Major Ph.D. Awards

Michael Muehlebach, Branco Weiss Fellow 2018.
Michael Muehlebach, ETH Medal 2018.
Mark Muller, ETH Medal 2016.
Mark Muller, Georges Giralt Ph.D. Award 2016 .
Markus Hehn, Jakob Ackeret Award 2014.
Sebastian Trimpe, Klaus Tschira Award 2014.
Angela Schoellig, ETH Medal 2012.
Angela Schoellig, Dimitris N. Chorafas Foundation Award 2012.

TEACHING

ETH Zurich

Recursive Estimation. 2009 - present.
Signals and Systems. 2009 - present.
Dynamic Programming and Optimal Control. 2008 - present.
!And Yet It Moves. 2007 - 2009.

Cornell University

Feedback Control Systems. 1997 - 2005.
Mechatronics Systems Engineering Projects. 1998 - 2005.
Robust and Optimal Control. 1998 - 2002.
Applied Systems Engineering. 1998.
Freshman Engineering Seminar. 1997.
Robotics and Control. 1997.

California Institute of Technology

Introduction to Robust Control. 1995.