

Curriculum Vitae

Dr. Sebastian Trimpe

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APPOINTMENTS

Group Leader and Senior Research Scientist¹ since Sep. 2013
Max Planck Institute for Intelligent Systems (MPI-IS), Tübingen, Germany
Intelligent Control Systems Group (group leader), Autonomous Motion Dept. (Stefan Schaal)
(2013–2016: Research Scientist; since Oct. 2016: Senior Research Scientist)¹

Activities (comparable to assistant professor):

- Leading *Intelligent Control Systems Group* (currently 4 PhD + several Master students)
- Conducting independent research
- Raising third-party research funding (currently 2 PhD positions from DFG and industry)
- Advising and hiring students (PhD, Master)
- Participating in department and institute management

Postdoctoral Researcher and Lecturer 2013
ETH Zurich, Switzerland
Institute for Dynamic Systems and Control (Raffaello D’Andrea)

Research Assistant 2008-2013
ETH Zurich, Switzerland
Institute for Dynamic Systems and Control (Raffaello D’Andrea)

EDUCATION

Dr. sc. (Ph.D.), ETH Zurich, Switzerland 2013
Institute for Dynamic Systems and Control, Dept. of Mechanical and Process Engineering
Advisor: Prof. Raffaello D’Andrea. Referees: Prof. Manfred Morari, Prof. Jan Lunze.

Dipl.-Ing. (M.Sc.), Hamburg University of Technology, Germany 2007
Electrical Engineering.

MBA, Hamburg University of Technology/NIT Hamburg, Germany 2007
Technology Management.

Visiting Student Researcher, University of California Berkeley, USA 2007
Dept. of Mechanical Engineering, 8 months, advisor: Prof. Tarek I. Zohdi.

B.Sc., Hamburg University of Technology, Germany 2005
General Engineering Science.

Abitur, Gymnasium Angelaschule Osnabrück, Germany 2001
High school diploma.

¹ According to MPI-IS conventions, Research Scientist roughly corresponds to an assistant professor position, and Senior Research Scientist to an assistant professor after 3-year review (see <http://is.tuebingen.mpg.de/careers-at-mpi>).

AWARDS AND HONORS

Awards

- Top Four Finalist for Best Student Paper Award** (as co-author and advisor) at the *13th International Workshop on Discrete Event Systems (WODES)* for the paper entitled “Communication Rate Analysis for Event-based State Estimation” (authors: S. Ebner, S. Trimpe). 2016
- KlarText! Klaus Tschira Award for achievements in public understanding of science** (category: Computer Science). Awarded for PhD thesis and an article published in the German popular science magazine “Bild der Wissenschaft.” <http://www.klaus-tschira-preis.info> 2014
- IFAC Congress Interactive Paper Prize** (best out of 450 interactive papers), awarded at the triennial *World Congress of the International Federation of Automatic Control (IFAC)* for the paper entitled “An Experimental Demonstration of a Distributed and Event-based State Estimation Algorithm” (authors: S. Trimpe, R. D’Andrea). 2011
- General Engineering Award** for the best undergraduate degree, awarded by Hamburg University of Technology and ThyssenKrupp AG. 2005

Fellowships

- German National Academic Foundation** (Studienstiftung des deutschen Volkes) Scholarship throughout undergraduate and graduate studies. 2002-2007
- German Academic Exchange Service (DAAD)** 2007
Financial support during research stay at University of California Berkeley.
- Airbus Germany.** Funding of private MBA program in Technology Management at Hamburg University of Technology/NIT Hamburg. 2005-2007
- Rheinstahl Foundation** (ThyssenKrupp AG). Financial support. 2005-2007

THIRD-PARTY RESEARCH FUNDING (excluding fellowships and industry collaborations)

- EcoCPS: Event-based Wireless Control for Cyber-physical Systems** 2017-2019
Research grant within the German Research Foundation (DFG) Priority Program on “Cyber-physical networking,” PI with Marco Zimmerling (TU Dresden).
- Max Planck ETH Center for Learning Systems** 2015/2016
Joint research center between ETH Zurich and MPI for Intelligent Systems to support collaborations and research on Learning Systems, <http://learning-systems.org>.
Funding of 50% of own salary.
- Bayesian Optimization for Automatic Controller Design** 2015
Max Planck Grassroots grant, PI with Philipp Hennig (MPI Tübingen, Empirical Inference).
- Co-author: **Distributed Estimation and Control of Mechatronic Systems** 2012
Contributor and co-author of grant proposal at Swiss National Science Foundation (SNSF), PI: Raffaello D’Andrea.

INDUSTRY COLLABORATIONS AND FUNDING

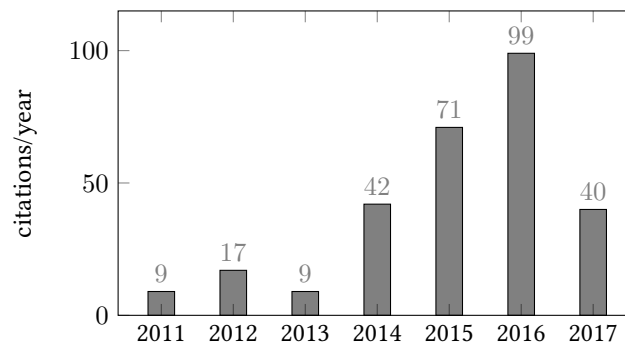
- Robert Bosch GmbH**, Corporate Research, Renningen, Germany 2015-2018
Research collaboration with *Cognitive Systems and Machine Learning* group (Dr. Yasser Jaidi, Dr. Duy Nguyen-Tuong) on *Data-based Control and Reinforcement Learning*.
Joint supervision of PhD project (Andreas Dörr), **fully funded by Bosch**.

IAV GmbH, Ingenieurgesellschaft Auto und Verkehr, Gifhorn, Germany since 2016
 Research collaboration with *Mechatronics/Control* group (Matthias Schultalbers, Dr.-Ing. Dieter Schwarzmann) on *Machine Learning for Control*.
 Research collaborations and exchange, **funded by IAV**.

PUBLICATIONS

Citation Indices (according to *Google Scholar*, 1 June 2017)

Citations: 294
 h-index: 9
 i10-index: 8



Journal Articles

- [1] M. Muehlebach and **S. Trimpe**, “Distributed event-based state estimation of networked systems: An LMI-approach,” *IEEE Transactions on Automatic Control*, under review.
- [2] **S. Trimpe**, “Event-based state estimation: An emulation-based approach,” *IET Control Theory & Applications*, 2017, [PDF], to appear.
- [3] M. Wüthrich, **S. Trimpe**, C. Garcia Cifuentes, D. Kappler, and S. Schaal, “A new perspective and extension of the Gaussian filter,” *The International Journal of Robotics Research*, vol. 35, no. 14, pp. 1731–1749, Dec. 2016, [PDF].
- [4] D. Laidig, **S. Trimpe**, and T. Seel, “Event-based sampling for reducing communication load in realtime human motion analysis by wireless inertial sensor networks,” in *Current Directions in Biomedical Engineering*, vol. 2, no. 1, Sep. 2016, pp. 711–714, [PDF].
- [5] **S. Trimpe** and R. D’Andrea, “Event-based state estimation with variance-based triggering,” *IEEE Transaction on Automatic Control (Special Issue on Control of Cyber-Physical Systems)*, vol. 59, no. 12, pp. 3266–3281, Dec. 2014, [PDF].
- [6] **S. Trimpe** and R. D’Andrea, “A limiting property of the matrix exponential,” *IEEE Transactions on Automatic Control*, vol. 59, no. 4, pp. 1105–1110, Apr. 2014, [PDF].
- [7] **S. Trimpe** and R. D’Andrea, “The Balancing Cube: A dynamic sculpture as test bed for distributed estimation and control,” *IEEE Control Systems Magazine*, vol. 32, no. 6, pp. 48–75, Dec. 2012, [PDF].

Conference Proceedings (full paper, peer-reviewed)

- [1] A. Marco, F. Berkenkamp, P. Hennig, A. P. Schoellig, A. Krause, S. Schaal, and **S. Trimpe**, “Virtual vs. real: Trading off simulations and physical experiments in reinforcement learning with Bayesian optimization,” in *Proc. of the IEEE International Conference on Robotics and Automation*, Singapore, May 2017, to appear, [PDF].
- [2] A. Doerr, D. Nguyen-Tuong, A. Marco, S. Schaal, and **S. Trimpe**, “Model-based policy search for automatic tuning of multivariate PID controllers,” in *Proc. of the IEEE International Conference on Robotics and Automation*, Singapore, May 2017, to appear, [PDF].
- [3] **S. Trimpe**, “Predictive and self triggering for event-based state estimation,” in *Proc. of the 55th IEEE Conference on Decision and Control*, Las Vegas, CA, USA, Dec. 2016, pp. 3098–3105, [PDF].

- [4] M. Wüthrich, C. Garcia Cifuentes, **S. Trimpe**, F. Meier, J. Bohg, J. Issac, and S. Schaal, “Robust Gaussian filtering using a pseudo measurement,” in *Proc. of the American Control Conference*, Boston, MA, USA, Jul. 2016, pp. 3606–3613, [PDF].
- [5] S. Ebner and **S. Trimpe**, “Communication rate analysis for event-based state estimation,” in *Proc. of the 13th International Workshop on Discrete Event Systems*, Xi’an, China, May 2016, pp. 189–196, [PDF], **Top Four Finalist for Best Student Paper Award**.
- [6] A. Marco, P. Hennig, J. Bohg, S. Schaal, and **S. Trimpe**, “Automatic LQR tuning based on Gaussian process global optimization,” in *Proc. of the IEEE International Conference on Robotics and Automation*, Stockholm, Sweden, May 2016, pp. 270–277, [PDF].
- [7] J. Issac, M. Wüthrich, C. Garcia Cifuentes, J. Bohg, **S. Trimpe**, and S. Schaal, “Depth-based object tracking using a robust Gaussian filter,” in *Proc. of the IEEE International Conference on Robotics and Automation*, Stockholm, Sweden, May 2016, pp. 608–615, [PDF].
- [8] A. Marco, P. Hennig, J. Bohg, S. Schaal, and **S. Trimpe**, “Automatic LQR tuning based on Gaussian process optimization: Early experimental results,” in *Machine Learning in Planning and Control of Robot Motion Workshop at the IEEE/RSJ International Conference on Intelligent Robots and Systems*, Hamburg, Germany, Sep. 2015, [PDF].
- [9] M. Wüthrich, **S. Trimpe**, D. Kappler, and S. Schaal, “A new perspective and extension of the Gaussian filter,” in *Proc. of Robotics: Science and Systems*, Rome, Italy, Jul. 2015, [PDF].
- [10] M. Muehlebach and **S. Trimpe**, “LMI-based synthesis for distributed event-based state estimation,” in *Proc. of the American Control Conference*, Chicago, USA, Jul. 2015, pp. 4060–4067, [PDF].
- [11] **S. Trimpe** and M. C. Campi, “On the choice of the event trigger in event-based estimation,” in *Proc. of the International Conference on Event-based Control, Communication, and Signal Processing*, Krakow, Poland, Jun. 2015, pp. 1–8, [PDF].
- [12] M. Muehlebach and **S. Trimpe**, “Guaranteed \mathcal{H}_2 performance in distributed event-based state estimation,” in *Proc. of the International Conference on Event-based Control, Communication, and Signal Processing*, Krakow, Poland, Jun. 2015, pp. 1–8, [PDF].
- [13] **S. Trimpe** and J. Buchli, “Event-based estimation and control for remote robot operation with reduced communication,” in *Proc. of the IEEE International Conference on Robotics and Automation*, Seattle, USA, May 2015, pp. 5018–5025, [PDF].
- [14] **S. Trimpe**, “Stability analysis of distributed event-based state estimation,” in *Proc. of the 53rd IEEE Conference on Decision and Control*, Los Angeles, CA, USA, Dec. 2014, pp. 2013–2019, [PDF].
- [15] **S. Trimpe**, A. Millane, S. Doesseger, and R. D’Andrea, “A self-tuning LQR approach demonstrated on an inverted pendulum,” in *Proc. of the 19th IFAC World Congress*, Cape Town, South Africa, Aug. 2014, pp. 11 281–11 287, [PDF].
- [16] **S. Trimpe** and R. D’Andrea, “Event-based state estimation with variance-based triggering,” in *Proc. of the 51st IEEE Conference on Decision and Control*, Maui, HI, USA, Dec. 2012, pp. 6583–6590, [PDF].
- [17] **S. Trimpe**, “Event-based state estimation with switching static-gain observers,” in *Proc. of the 3rd IFAC Workshop on Distributed Estimation and Control in Networked Systems*, Santa Barbara, CA, USA, Sep. 2012, pp. 91–96, [PDF].
- [18] **S. Trimpe** and R. D’Andrea, “Reduced communication state estimation for control of an unstable networked control system,” in *Proc. of the 50th IEEE Conference on Decision and Control and European Control Conference*, Orlando, FL, USA, Dec. 2011, pp. 2361–2368, [PDF].
- [19] **S. Trimpe** and R. D’Andrea, “An experimental demonstration of a distributed and event-based state estimation algorithm,” in *Proc. of the 18th IFAC World Congress*, Milan, Italy, Aug. 2011, pp. 8811–8818, [PDF], **IFAC Congress Interactive Paper Prize (best out of 450 interactive papers)**.
- [20] **S. Trimpe** and R. D’Andrea, “Accelerometer-based tilt estimation of a rigid body with only rotational degrees of freedom,” in *Proc. of the IEEE International Conference on Robotics and Automation*, Anchorage, AK, USA, May 2010, pp. 2630–2636, [PDF].

- [21] **S. Trimpe** and R. D’Andrea, “A limiting property of the matrix exponential with application to multi-loop control,” in *Proc. of the Joint 48th IEEE Conference on Decision and Control and 28th Chinese Control Conference*, Shanghai, China, Dec. 2009, pp. 6419–6425, [PDF].
- [22] A. Kwiatkowski, **S. Trimpe**, and H. Werner, “Less conservative polytopic LPV models for charge control by combining parameter set mapping and set intersection,” in *Proc. of the 46th IEEE Conference on Decision and Control*, New Orleans, LA, USA, Dec. 2007, pp. 3363–3368.

Popular Science Articles

- [1] **S. Trimpe**, “Lernende Roboter,” *Jahrbuch der Max-Planck-Gesellschaft*, 2015, [online].
- [2] **S. Trimpe**, “Wenn es was zu sagen gibt,” *Bild der Wissenschaft (Sonderbeilage)*, pp. 20–23, Nov. 2014, [PDF], **Klaus Tschira Award for achievements in public understanding of science**.

Theses

- [1] **S. Trimpe**, “Distributed and event-based state estimation and control,” Doctoral Thesis, ETH Zurich (Swiss Federal Institute of Technology), Switzerland, 2013, [PDF].
- [2] **S. Trimpe**, “On the robustness of swarm behavior to obstacle variations,” Master Thesis, University of California Berkeley, CA, USA, and Hamburg University of Technology, Germany, 2007.
- [3] **S. Trimpe**, “Investigation of LPV parameter reduction,” Bachelor Thesis, Hamburg University of Technology, Germany, 2005.

Abstracts, Posters

- [1] **S. Trimpe** and D. Baumann, “Novel triggering concepts for event-based state estimation,” in *Tagung GMA-Fachausschuss 1.50 “Grundlagen vernetzter Systeme”*, Günzburg, Germany, May 2017.
- [2] **S. Trimpe**, “Learning for dynamic systems and control,” in *Workshop at Google Research*, Zurich, Switzerland, Oct. 2016.
- [3] **S. Trimpe**, “Control and communication architecture for medium-sized swarms,” in *Max Planck ETH Workshop on Design and Coordination of Micro- to Macro-Scale Swarms*, Radolfzell, Germany, Jun. 2016.
- [4] A. Dörr, D. Nguyen-Tuong, **S. Trimpe**, and S. Schaal, “From data to policies – ideas on learning control,” in *Machine Learning Summer School*, Cádiz, Spain, May 2016.
- [5] M. Wüthrich, **S. Trimpe**, D. Kappler, and S. Schaal, “A new perspective and extension of the Gaussian filter,” in *Max Planck ETH Workshop on Learning Control*, Tübingen, Germany, Nov. 2015.
- [6] A. Marco, P. Hennig, J. Bohg, S. Schaal, and **S. Trimpe**, “Automatic LQR tuning based on Gaussian process optimization,” in *Max Planck ETH Workshop on Learning Control*, Tübingen, Germany, Nov. 2015.
- [7] A. Doerr, C. de Crousaz, L. Righetti, and **S. Trimpe**, “Adaptive and learning concepts in hydraulic force control,” in *Max Planck ETH Workshop on Learning Control*, Tübingen, Germany, Nov. 2015.
- [8] S. Ebner and **S. Trimpe**, “Adaptive communication for control,” in *Max Planck ETH Workshop on Learning Control*, Tübingen, Germany, Nov. 2015.
- [9] A. Marco, P. Hennig, and **S. Trimpe**, “Automatic controller design based on Bayesian optimization,” in *Max Planck Institute for Intelligent Systems, Symposium on Intelligent Systems in Science and Industry*, Tübingen, Germany, Jul. 2015.
- [10] M. Wüthrich, **S. Trimpe**, D. Kappler, and S. Schaal, “The Feature Gaussian Filter,” in *IEEE International Conference on Robotics and Automation, Late Breaking Results Session*, Seattle, USA, May 2015.
- [11] **S. Trimpe**, “Distributed and event-based state estimation,” in *Tagungsband GMA-Fachausschuss 1.40 “Theoretische Verfahren der Regelungstechnik”*, Salzburg, Austria, Sep. 2014.
- [12] **S. Trimpe**, “Feedback control and learning,” in *ETH/MPI Research Network on Learning Systems*, Zurich, Switzerland, Jun. 2014.

INVITED TALKS (excluding conference presentations and tutorials)**Academic Audience**

Max Planck Institute for Software Systems (Prof. R. Majumdar), Kaiserslautern, Germany	May 2017
University of Augsburg, Department of Computer Science, Germany	Apr. 2017
University Magdeburg, Inst. for Automation Engineering (Prof. R. Findeisen), Germany	Mar. 2017
Delft University of Technology, Delft Center for Systems and Control, Netherlands	Dec. 2016
University of Toronto, Inst. for Aerospace Studies (Prof. A. Schoellig), Canada	Jul. 2016
University of Stuttgart, Inst. for System Dynamics (Prof. O. Sawodny), Germany	Jun. 2016
Royal Institute of Technology (KTH), Automatic Control Dept., Stockholm, Sweden	May 2016
Delft University of Technology, Delft Center for Systems and Control, Netherlands	Dec. 2015
Paderborn University, Automatic Control Group (Prof. D. Quevedo), Germany	Nov. 2015
Technische Universität Berlin, Control Systems Group (Prof. J. Raisch), Germany	Jul. 2015
Symposium on Intelligent Systems in Science and Industry, MPI Tübingen, Germany	Jul. 2015
University of Stuttgart, Inst. f. System Theory & Autom. Control (Prof. F. Allgöwer), Germany	May 2015
Karlsruhe Inst. of Technology, Inst. f. Anthropomatics & Robotics (Prof. U. Hanebeck), Germany	Nov. 2014
Lund University, Automatic Control Department, Sweden	Oct. 2014
Boston University, Center for Information & Systems Engineering, USA	Apr. 2014
University of California, Los Angeles, Electrical Eng. Dept. (Profs. Dörfler & Tabuada), USA	Apr. 2014
Eindhoven University of Technology, Control Syst. Tech. Sect. (Prof. M. Heemels), Netherlands	May 2013
Boston University, Multi-robot Systems Lab (Prof. M. Schwager), USA	May 2013
Massachusetts Institute of Technology, Distributed Robotics Group (Prof. D. Rus), USA	May 2013
Carnegie Mellon University, Robotics Institute, Pittsburgh, USA	Apr. 2013
University of California, Berkeley, EECS (Prof. P. Abbeel), USA	Apr. 2013
Max Planck Institute for Intelligent Systems, AMD (Prof. S. Schaal), Tübingen, Germany	Apr. 2013
University of Kassel, Distributed Systems Group (Prof. K. Geihs), Germany	Feb. 2013
Technische Universität München (TUM), Faculty of Informatics, Germany	Feb. 2013
Workshop DFG Priority Program 1305 (Contr. of Netw. Dyn. Syst.), TU München, Germany	Oct. 2012
California Institute of Technology, Control and Dynamical Systems Group, USA	Sep. 2012
University of Southern California, Center for Robotics and Embedded Syst., Los Angeles, USA	Sep. 2012
Royal Institute of Technology (KTH), Automatic Control Dept., Stockholm, Sweden	May 2012
Ruhr-Universität Bochum, Inst. for Automation & Computer Control (Prof. J. Lunze), Germany	Nov. 2011
Ruhr-Universität Bochum, Inst. for Automation & Computer Control (Prof. J. Lunze), Germany	Dec. 2009
Hamburg University of Technology, Inst. of Control Systems (Prof. H. Werner), Germany	Nov. 2009
University of Stuttgart, Inst. of Eng. and Comp. Mechanics (Prof. P. Eberhard), Germany	Nov. 2007

Industry

IAV GmbH, Gifhorn, Germany	May 2016
ABB Corporate Research, Baden, Switzerland	Apr. 2016

General Audience

Workshop for high school students and teachers, during IEEE CDC, Las Vegas, USA	Dec. 2016
Workshop for high school students and teachers, during American Control Conf., Boston, USA	Jul. 2016
Public lecture, Open House, MPI Tübingen, Germany	Jun. 2016
Tech Open Air Berlin, Interdisciplinary Technology Festival, Berlin, Germany	Jul. 2015
Workshop for high school students and teachers, during IEEE CDC, Los Angeles, USA	Dec. 2014
Workshop for high school students and teachers, during IFAC World Congress, South Africa	Aug. 2014
Workshop for high school students and teachers, during IEEE CDC, Maui, USA	Dec. 2012
Workshop for high school students and teachers, during IEEE CDC, Orlando, USA	Dec. 2011
Swiss Science Center Technorama, Winterthur, Switzerland	May 2011
Graduation ceremony TU Hamburg, speech on behalf of graduates, Hamburg, Germany	Jun. 2008

TEACHING

University Lectures

- Statistical Learning and Stochastic Control**, University of Stuttgart Winter 2016/17
http://www.ist.uni-stuttgart.de/lehre/lehrveranstaltungen/WS2016_17/SLSC.html
 Graduate level, English/German.
 Guest lecturer (2 lectures).
- Recursive Estimation**, ETH Zurich (151-0566-00) Spring 2013
 Graduate level, approx. 160 students, English.
 Responsible lecturer. Class evaluation: **4.3** (1.0/5.0 lowest/highest, department average: 4.0).
- Dynamic Programming and Optimal Control**, ETH Zurich (151-0563-00) 2008-12
 Graduate level, approx. 120 students, English.
 Substitute lecturer for 5 lectures in total.

Tutorials

- Introduction to Distributed Event-based State Estimation**, Baden-Baden, Germany Sep. 2016
 IEEE Int. Conf. on Multisensor Fusion and Integration for Intelligent Systems (MFI).
 Invited Tutorial.
- Bayesian Optimization for Automatic Controller Tuning**, MPI Tübingen, Germany Jun. 2016
 Tutorial for industry collaborators (IAV Gifhorn).

Teaching Assistant

- Recursive Estimation**, ETH Zurich (151-0566-00) Spring 2010/11
 Development of new class, main teaching assistant, substitute lecturer occasionally.
- Dynamic Programming and Optimal Control**, ETH Zurich (151-0563-00) Fall 2008/09
 Development of new class, main teaching assistant, substitute lecturer occasionally.
- !And Yet It Moves**, ETH Zurich (151-0585-02) Spring 2008
 Main research/teaching assistant in project-based systems engineering class.
- Linear Algebra II**, Hamburg University of Technology (TUHH) Spring 2005
 Student teaching assistant.
- Linear Algebra I**, Hamburg University of Technology (TUHH) Fall 2004
 Student teaching assistant.
- Electrical Engineering for Information Technology I**, TUHH Fall 2004
 Student teaching assistant.

STUDENT ADVISING

PhD

- Dominik Baumann, MPI-IS Tübingen since 2017
 Alonso Marco Valle, MPI-IS Tübingen since 2016
 Andreas Dörr, MPI-IS Tübingen and Bosch Corporate Research Renningen since 2015
 Manuel Wüthrich, MPI-IS Tübingen (co-supervision with S. Schaal and J. Bohg) since 2013

Research internship (PhD or Master level)

- Andrea Bajcsy, MPI-IS Tübingen (co-supervision with J. Bohg) 2016
 Ashish Bussa, MPI-IS Tübingen (co-supervision with L. Righetti) 2016

Master

Anna Deichler, MPI-IS Tübingen and TU Delft (co-supervision with J. Bohg)	since 2017
Friedrich Solowjow, MPI-IS Tübingen and Univ. Bonn	since 2016
Caroline Handel, MPI-IS Tübingen and Univ. Stuttgart (co-supervision with M. Müller)	2017
Harsoveet Singh, MPI-IS Tübingen and ETH Zurich	2016
Cédric de Crousaz, MPI-IS Tübingen and ETH Zurich (co-supervision with L. Righetti)	2016
Simon Ebner, MPI-IS Tübingen and Univ. Stuttgart	2016
Andreas Dörr, MPI-IS Tübingen and Univ. Stuttgart (co-supervision with L. Righetti)	2015
Alonso Marco Valle, MPI-IS Tübingen and TU Barcelona	2015
Holger Kaden, MPI-IS Tübingen and Univ. Tübingen (co-supervision with J. Bohg)	2014
Simon Dössegger, ETH Zurich	2012
Marc Spirig, ETH Zurich	2010
Dursun Akay, ETH Zurich	2009

Other (Semester Project, Bachelor Thesis, Studies on Mechatronics)

Alexander Millane, ETH Zurich	2013
Kilian Schindler, ETH Zurich	2012
André Widmer, ETH Zurich	2011
Korbinian Nottensteiner, ETH Zurich and TU München	2010
Niklaus Voellmy, ETH Zurich	2010
Andreas Köberl, ETH Zurich	2010
Lukas Wunderli, ETH Zurich	2009
Valentin Baumann, ETH Zurich	2009
Gajamohan Mohanarajah, ETH Zurich and Tokyo Institute of Technology	2008

PUBLIC OUTREACH**Exhibitions** (Balancing Cube, with Raffaello D'Andrea)

European Control Conference (ECC), Zurich, Switzerland.	Jul. 2013
International Federation of Automatic Control (IFAC) World Congress, Milan, Italy.	Aug. 2011
Festival Della Scienza, Genoa, Italy.	Oct. 2009
Nacht der Forschung, Zurich, Switzerland.	Sep. 2009

Lab Demonstrations

MPI Tübingen , autonomous robots and learning control research [video]: More than 30 live demonstrations to guests from academia, media, industry (e.g. Daimler, Bosch, BMW).	since 2014
ETH Zurich , Balancing Cube [video]: More than 120 live demonstrations to guests from academia, media, government, industry, schools.	2009–13

High school workshops

Organization and participation in workshops for high school students and teachers (held in conjunction with international conferences like CDC, ACC, IFAC).	since 2011
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PROFESSIONAL ACTIVITIES**Conference, Workshop, and Session Organization**

Invited Session at IEEE Conf. on Decision and Control (CDC) , Melbourne, Australia Initiator and organizer of Invited Session on “Learning-based Control” (with Angela Schoellig, University of Toronto, and Melanie Zeilinger, ETH Zurich), <i>under review</i> . http://tiny.cc/LearningControlSessions	2017
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- Invited Session at IEEE Conf. on Decision and Control (CDC)**, Las Vegas, USA 2016
Initiator and organizer of Invited Session on “Learning-based Control” (with Angela Schoellig, University of Toronto, and Melanie Zeilinger, ETH Zurich).
<http://tiny.cc/LearningControlSessions>
- Special Session at Int. Workshop on Discrete Event Systems (WODES)**, Xi’an, China 2016
Organizer of Special Session on “Event-driven Control, Estimation, and Optimization” (with Christos G. Cassandras, Boston University).
<http://wodes2016.diee.unica.it>
- Max Planck ETH Workshop on Learning Control**, Tübingen, Germany 2015
Initiator, co-organizer, and program co-chair (with Jonas Buchli, Ludovic Righetti, Melanie Zeilinger).
<http://learning-systems.org/events/learningcontrol>
- International Conference on Event-based Control, Communication, and Signal Processing (EBCCSP)**, Krakow, Poland 2015
Work-in-Progress Program Chair (with Manuel Mazo Jr., TU Delft).
Organizer and Program Chair of Special Session on “Event-based State Estimation” (with Joris Sijs, TNO Netherlands).
<http://ebccsp2015.org>
- European Control Conference (ECC)**, Zurich, Switzerland 2013
Member of organizing committee, Academic Tours Chair.
<http://www.ecc2013.ethz.ch>
- Associate Editor**
- 25th Mediterranean Conference on Control and Automation (MED) 2017
IEEE Int. Conf. on Multisensor Fusion and Integration for Intelligent Systems (MFI) 2016
Int. Conf. on Event-based Control, Communication, and Signal Processing (EBCCSP) 2015
- International Program Committees**
- Int. Conf. on Event-based Control, Communication, and Signal Processing (EBCCSP) 2015-17
Int. Workshop on Discrete Event Systems (WODES) 2016
IEEE Int. Conf. on Cyber-Physical Systems, Networks, and Applications 2016
IFAC Symposium on Advances in Control Education 2016
Machine Learning in Planning and Control of Robot Motion Workshop at IROS 2015 2015
IFAC Workshop on Internet Based Control 2015
IEEE Int. Conf. on Emerging Technologies and Factory Automation (ETFA) 2015
- Reviewing**
- **Journals**
- Regular:* IEEE Transactions on Automatic Control, Automatica, IEEE Transactions on Control Systems Technology.
- Occasional:* IEEE Transactions on Control of Network Systems, Systems & Control Letters, IEEE Transactions on Robotics, IEEE Robotics and Automation Letters, IEEE Transactions on Industrial Informatics, IEEE Transactions on Signal Processing, IEEE Signal Processing Letters, Signal Processing, IEEE Transactions on Automation Science and Engineering, IEEE Transactions on Vehicular Technology, IEEE Systems Journal, Asian Journal of Control, Sensors.
- **Conferences**
- Regular:* IEEE Conference on Decision and Control (CDC), Neural Information Processing Systems (NIPS), Robotics: Science and Systems (RSS), IFAC World Congress, American Control Conference (ACC), European Control Conference (ECC), IEEE International Conference on Robotics and Automation (ICRA), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), International Conference on Event-

based Control, Communication, and Signal Processing (EBCCSP).

Occasional: IEEE Multi-conference on Systems and Control (MSC), IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys), International Workshop on Discrete Event Systems (WODES), IFAC Symposium on System Identification (SYSID), IFAC Symposium Advances in Control Education (ACE), IEEE International Conference on Rehabilitation Robotics (ICORR), IEEE International Conference on Emerging Technologies and Factory Automation (ETFA).

- **Books:** Springer.
- **Research grant proposals:** Swiss National Science Foundation (SNSF).

INSTITUTE ADMINISTRATION

Department Coordinator for Scientific Advisory Board , MPI-IS Tübingen	2016
Coordinator of the Autonomous Motion Department for the Scientific Advisory Board Meeting 2016, which is the primary evaluation of the whole institute (roughly every 3 years). Responsible for overall organization and planning, coordination with other departments and parties, scientific report, presentations.	
Institute Election Committee , MPI-IS Tübingen/Stuttgart	2015
Member of the Election Committee organizing and conducting institute-wide elections of <i>Section Representative</i> and <i>Ombudsperson</i> among all scientific employees.	
Faculty Meetings , MPI-IS Tübingen	since 2015
Participation in monthly meetings of all faculty members (directors and group leaders).	

MEMBERSHIPS

Academic

Max Planck ETH Center for Learning Systems, Associated Member [website]	since 2016
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Professional Organizations

Deutscher Hochschulverband (German Association of University Professors and Lecturers)	since 2016
VDI Verein Deutscher Ingenieure (The Association of German Engineers)	since 2014
IEEE (Control Systems Society, Robotics and Automation Society)	since 2008
VDE Verband der Elektrotechnik Elektronik Informationstechnik	since 2005

Technical Committees (TCs)

IEEE Control Systems Society, TC on Intelligent Control	since 2016
IEEE Control Systems Society, TC on Networks and Communications	since 2015
International Federation of Automatic Control (IFAC), TC on Control Education	since 2014
IEEE Control Systems Society, TC on Control Education	since 2012