Simon K. Niederländer

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Autonomous Systems and Control
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Research Interests

Convex Optimization; Dynamical Systems; Monotone Operators; Systems and Control

Professional Experience

Industrial Experience

since 08/2023	**Research Scientist** Research and Development, T FOA ASY-DE Siemens AG, Munich, Germany
11/2021–07/2023	**Systems and Control Engineer** Research and Development, AEGA System Design MTU Aero Engines AG, Munich, Germany
04/2014–07/2014	**Graduate Research Intern** Corporate Research, AEH Control Theory Robert Bosch GmbH, Stuttgart Area, Germany

Research Experience

09/2015–10/2021	**Research and Teaching Assistant** Institute for Systems Theory and Automatic Control University of Stuttgart, Germany
10/2014–07/2015	**Graduate Research Assistant** Department of Mechanical and Aerospace Engineering University of California, San Diego, CA, USA
06/2012–09/2012	**Undergraduate Research Assistant** Department of Electrical and Computer Engineering National University of Singapore, Singapore

Education

09/2015–12/2022	**Ph.D., Systems, Optimization and Control** University of Stuttgart, Germany
10/2012–08/2015	**M.Sc., Engineering Cybernetics** University of Stuttgart, Germany
10/2008–09/2012	**B.Eng., Mechanical Engineering** Deggendorf Institute of Technology, Germany

Honors and Awards

2014–2015	**Dr. Jürgen und Irmgard Ulderup Fellowship**
2011–2015	**Fellow of German Academic Scholarship Foundation** (Studienstiftung des deutschen Volkes)
2010–2012	**Fellow of German Academic Exchange Service** (Deutscher Akademischer Austauschdienst)

Teaching Assistance

2020–2021	**Systems and Control** (Undergraduate Course), University of Stuttgart
2016–2020	**Nonlinear Control** (Graduate Course), University of Stuttgart
Summer 2019	**Convex Optimization** (Graduate Course), University of Stuttgart
Winter 2017	**Introduction to Automatic Control** (Undergraduate Course), University of Stuttgart
Winter 2015	**Introduction to Adaptive Control** (Graduate Course), University of Stuttgart

Invited Talks

01/2023	**Learning and Dynamical Systems Group**, Max Planck Institute for Intelligent Systems, Tübingen, Germany
11/2022	**Research Seminar Dynamical Systems**, University of Passau, Germany

Professional Service

Membership in Professional Societies

since 2015	**Society of Industrial and Applied Mathematics** (SIAM)
since 2014	**Institute of Electrical and Electronics Engineers** (IEEE)
since 2014	**Control Systems Society** (CSS)

Reviewer

Automatica; IEEE Control Systems Letters; IEEE Transactions on Automatic Control; Optimization; SIAM Journal on Control and Optimization

Publications

Journal Articles

[J-03] **S. K. Niederländer**, *On the Arrow–Hurwicz differential system for linearly constrained convex minimization*, Optimization (2023), DOI: 10.1080/02331934.2023.2215799

[J-02] **S. K. Niederländer**, *Second-order dynamics with Hessian-driven damping for linearly constrained convex minimization*, SIAM J. Control Optim., 59 (2021), pp. 3708-3736.

[J-01] J. Cortés and **S. K. Niederländer**, *Distributed coordination for nonsmooth convex optimization via saddle-point dynamics*, J. Nonlinear Sci., 29 (2019), pp. 1247-1272.

Conference Proceedings

[C-03] **S. K. Niederländer**, *Ergodic convergence results for the Arrow–Hurwicz differential system*, in Proc. IEEE Conf. Decis. Control, Singapore, Singapore, 2023, to appear.

[C-02] **S. K. Niederländer**, F. Allgöwer and J. Cortés, *Exponentially fast distributed coordination for nonsmooth convex optimization*, in Proc. IEEE Conf. Decis. Control, Las Vegas, NV, USA, 2016, pp. 1036-1041.

[C-01] **S. K. Niederländer** and J. Cortés, *Distributed coordination for separable convex optimization with coupling constraints*, in Proc. IEEE Conf. Decis. Control, Osaka, Japan, 2015, pp. 694-699.

Other Works

[O-02]   **S. K. Niederländer**, *Dynamical approaches to linearly constrained convex minimization*, Ph.D. Thesis, University of Stuttgart, 2022.

[O-01]   **S. K. Niederländer**, *Distributed continuous-time coordination for nonsmooth convex and robust optimization*, Master Thesis, University of Stuttgart, 2015.

References

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