Ludwig Dierks

Department of Informatics
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Research Fields

Market Design, Artificial Intelligence, Data Science, Operations Research

Education

02.2016-04.2021	**Ph.D. Informatics**, *University of Zurich*, Switzerland
	"Market Design for Cloud Computing and Software Markets", Defense Date: 18.01.2021, Advisor: Sven Seuken
10.2012-06.2015	**M.Sc. Mathematics in Operations Research**, *Technical University of Munich*, Germany
	Cooperative Game Theory, Combinatorial Optimization, Advisor: Felix Brandt
10.2009-09.2012	**B.Sc. in Mathematics**, *Technical University of Munich*, Germany

Research Internships, Summer Schools, etc.

06.2018-09.2018	**Research Intern**, *Microsoft Office of the Chief Economist*, U.S.A
	Mentor: Jacob La'Riviere
06.2017	**Student Visitor**, *Microsoft Research Cambridge*, Great Britain
07.2016	**Microsoft Research Summer School**, *Microsoft Research Cambridge*, Great Britain
10.2012-08.2013	**Exchange Student**, *National Cheng Kung University*, Taiwan (R.O.C.)
	Advisor: Prof. Ruey-Lin Sheu

Employment History

05.2022-now	**SNF PostDoc.Mobility Fellow**, *Kyushu University*, Fukuoka, Japan
	Multi-Agent Laboratory under Makoto Yokoo
06.2021-04.2022	**Post Doc (40%)**, *Kyushu University*, remote from Zurich, Switzerland
	Multi-Agent Laboratory under Makoto Yokoo
06.2021-04.2022	**Post Doc (60%)**, *University of Zurich*, Zurich, Switzerland
	Computation and Economics Research Group under Sven Seuken
03.2021-05.2021	**Post Doc**, *University of Zurich*, Zurich, Switzerland
	Computation and Economics Research Group under Sven Seuken
06.2018-09.2018	**Research Intern**, *Microsoft Office of the Chief Economist*, Redmond, U.S.A
	Under Jacob La'Riviere
10.2015-02.2021	**Ph.D. Student**, *University Zurich*, Zurich, Switzerland
	Computation and Economics Research Group under Sven Seuken

11.2013-09.2014	**Working Student**, *Berner & Mattner*, Munich, Germany
03.2012-04.2012	**Intern**, *iic engineers (now mosaiic)*, Munich, Germany
10.2011-03.2012	**Student Assistant**, *TUM*, Munich, Germany

Prizes, Awards, Fellowship

| 2022-2024 | SNF PostDoc.Mobility Fellowship; Starting date: 01.05.22, Duration 2 Years; Amount: CHF 104,000 |
| 2022 | AAAI Blue Sky Best Paper Award, 3rd place for 'Market Design for Drone Traffic Management' |

Peer-reviewed Journal Publications

Cloud Pricing: The Spot Market Strikes Back Ludwig Dierks and Sven Seuken; In *Management Science 68(1):105-122*, 2021; Full paper: (PDF); Previously appeared as a 1-page extended abstract at EC'19;

On the cluster admission problem for cloud computing Ludwig Dierks, Ian Kash and Sven Seuken; In *Journal of Artificial Intelligence Research (JAIR) 71 (2021): 1-40*, 2021; Full paper: (PDF); Previously appeared as a 6-page extended abstract at NetEcon'19;

Peer-reviewed Conference and Workshop Publications

Strategy-Proof House Allocation with Existing Tenants over Social Networks Bo You, Ludwig Dierks, Taiki Todo, Minming Li and Makoto Yokoo; To appear in *Proceedings of the Thirty-Sixth AAAI Conference on Artificial Intelligence* (AAAI-22);

Market Design for Drone Traffic Management Sven Seuken, Paul Friedrich and Ludwig Dierks; To appear in *Proceedings of the Thirty-Sixth AAAI Conference on Artificial Intelligence* (AAAI-22); Full paper: (PDF)

The Competitive Effects of Variance-based Pricing Ludwig Dierks and Sven Seuken; In *Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence* (IJCAI'20); Full paper: (PDF)

Cloud Pricing: The Spot Market Strikes Back Ludwig Dierks and Sven Seuken; In *Proceedings of the 20th ACM Conference on Economics and Computation* (EC'19); Extended Abstract (full version in Management Science); Full paper: (PDF)

On the cluster admission problem for cloud computing Ludwig Dierks, Ian Kash and Sven Seuken; In *Proceedings of the 14th Workshop on the Economics of Networks* (NetEcon'19); 6-page Extended Abstract (full version in JAIR); Full paper: (PDF);

Contributions to Conferences

25/10/2021	Invited Talk "Revenue Maximization for Consumer Software: Subscription or Perpetual License?"; *Informs Annual Meeting 2021*; Virtual
22/07/2021	Talk "Export Restrictions in the Face of COVID-19: A Game-Theoretic Analysis of Global Demand Shocks"; *6th World Congress of the Game Theory Society*; Budapest, Hungary (Virtual)
22/07/2021	Talk "The Competitive Effects Of Variance-based Pricing"; *6th World Congress of the Game Theory Society*; Budapest, Hungary (Virtual)

01/14/2020 Poster "The Competitive Effects Of Variance-based Pricing"; *29th International Joint Conference on Artificial Intelligence*; Yokohama, Japan (Virtual)

01/14/2020 Talk "The Competitive Effects Of Variance-based Pricing"; *29th International Joint Conference on Artificial Intelligence*; Yokohama, Japan (Virtual)

11/09/2020 Invited Talk "The Competitive Effects Of Variance-based Pricing"; *Informs Annual Meeting 2020*; Virtual

10/20/2019 Invited Talk "Cloud Pricing: The Spot Market Strikes Back"; *Informs Annual Meeting 2019*; Seattle, Washington, USA

06/28/2019 Talk "On the cluster admission problem for cloud computing"; *The 14th Workshop on the Economics of Networks, Systems and Computation*; Phoenix, Arizona, USA

06/26/2019 Talk "Cloud Pricing: The Spot Market Strikes Back"; *20th ACM Conference on Economics and Computation*; Phoenix, Arizona, USA, Recording: https://youtu.be/3EK5ldZppSM

11/04/2018 Invited Talk "The Power of Machine Learning and Market Design for Cloud Computing Admission Control"; *Informs Annual Meeting 2018*; Phoenix, Arizona, USA

07/25/2016 Poster "Cloud Pricing: The Spot Market Strikes Back"; *17th ACM Conference on Economics and Computation*; Maastricht, Netherlands

07/24/2016 Talk "Cloud Pricing: The Spot Market Strikes Back"; *Workshop on the Economics of Cloud Computing*; Maastricht, Netherlands

Other Artifacts With Documented Use (Public Working Papers)

Revenue Maximization for Consumer Software: Subscription or Perpetual License? Ludwig Dierks and Sven Seuken; Full paper: (PDF)

Search and Matching for Adoption from Foster Care Nils Olberg, Ludwig Dierks, Sven Seuken, Vincent Slaugh and Utku Ünver; Full paper: (PDF)

Submitted but not yet accepted/published publications

When prices should stay fixed: On the limitations of spot pricing in larger markets Ludwig Dierks and Makoto Yokoo

Unpublished Work (In Preparation for Submission)

Export Restrictions in the Face of COVID-19: A Game-Theoretic Analysis of Global Demand Shocks Ludwig Dierks and Sven Seuken

Efficiency Gains from Flexible Scheduling Policies in the Cloud Ludwig Dierks, Jacob LaRiviere, Aadharsh Kannan, and Thomas Moscibroda;

Supervision of Students (at UZH)

03.2021-08.2021 Thesis Supervision; Bachelor Thesis of Tim Ehrensperger

02.2019-07.2019 Thesis Supervision; Bachelor Thesis of David Lehnherr

Teaching Activities

At University of Zurich

08.2021-01.2022 Lecturer; Lecture: Economics and Computation

08.2020-01.2021 Lecturer; Lecture: Economics and Computation

02.2019-07.2019	Teaching Assistant; Lecture: Market Design and Machine Learning
08.2018-01.2019	Teaching Assistant; Lecture: Economics and Computation
02.2018-07.2018	Teaching Assistant; Lecture: Market Design: Theory and Practice
08.2017-01.2018	Teaching Assistant; Lecture: Economics and Computation
08.2016-01.2018	Teaching Assistant; Lecture: Economics and Computation
	At Technical University of Munich
10.2011-03.2012	Student Teaching Assistant; Lecture: Discrete Structures

Scientific Reviewing Activities

Program Committee:
AAA'21, EC'22

Other reviews:
EC'16, EC'17, NetEcon'17, AAAI'18, Operations Research, EC'21, ACM Transactions on Economics and Computation, Naval Research Logistics, Autonomous Agents and Multi-Agent Systems, Production and Operations Management, IEEE Transactions on Services Computing, IEEE Transactions on Network and Service Management

Active Memberships in Scientific Societies

Member: Game Theory Society; INFORMS (Auctions & Market Design Section); ACM SIGecom

Personal Skills

Languages	German (native), English (fluent)
Programming Languages	Python (incl. Pandas), Java, Matlab, Mathematica, C++, R, Excel/VBA

Personal Information

Citizenship	German
Languages	German (native), English (fluent)