

Ludwig Dierks

Information and Decision Sciences
University of Illinois at Chicago
UH 2415, 601 S Morgan St
Chicago, IL 60607, USA

📞 +1 (312) 493-2752
✉️ ldierks@uic.edu
🌐 <https://www.ludwigdierks.com>
Google Scholar ID: iBNwMZYAAAAJ

Research Fields

Primary Market Design
Secondary Revenue Management, Operations Management, Artificial Intelligence

Education

02.2016-04.2021 **Ph.D. Informatics**, *Faculty of Economics, Business Administration and Informatics; University of Zurich*, Switzerland
"Market Design for Cloud Computing and Software Markets", Grade: 'summa cum laude', Defense Date: 18.01.2021, Advisor: Sven Seuken

10.2012-06.2015 **M.Sc. Mathematics in Operations Research**, *Department of Mathematics; Technical University of Munich*, Germany
Cooperative Game Theory, Combinatorial Optimization, Advisor: Felix Brandt

10.2009-09.2012 **B.Sc. Mathematics**, *Department of 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

06.2017-06.2017 **Student Visitor**, *Microsoft Research Cambridge*, Great Britain

07.2016-07.2016 **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

08.2023-ongoing **Assistant Professor (Tenure Track)**, *University of Illinois at Chicago*, Chicago, USA
Department of Information and Decision Sciences

05.2022-07.2023 **SNSF PostDoc.Mobility Fellow**, *Kyushu University*, Fukuoka, Japan
Multi-Agent Laboratory under Makoto Yokoo

06.2021-04.2022 **Postdoctoral Researcher**, *University of Zurich (60%) and Kyushu University (40%)*, Zurich, Switzerland
Computation and Economics Research Group under Sven Seuken and Multi-Agent Laboratory under Makoto Yokoo

03.2021-05.2021 **Postdoctoral Researcher**, *University of Zurich*, Zurich, Switzerland
Computation and Economics Research Group under Sven Seuken

10.2015-02.2021 **Ph.D. Student**, *University 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

11.2013-09.2014 **Working Student**, *Berner & Mattner*, Munich, Germany

03.2012-04.2012 **Intern**, *iic engineers (now mosaic)*, Munich, Germany

10.2011-03.2012 **Student Assistant**, *TUM*, Munich, Germany

Prizes, Awards, Fellowship

2025 IHDSR Seed Funding for 'Data-informed Earlier Child Autism Diagnostic Evaluations ',
Amount: \$50,000

2024 INFORMS Public Sector OR Video Competition, Honorable Mention (i.e., Second Place) for 'Search and Matching for Adoption from Foster Care'

2024 INFORMS Public Sector OR Paper Competition, Finalist for 'Search and Matching for Adoption from Foster Care'

2022-2023 SNSF PostDoc.Mobility Fellowship; Starting date: 01.05.22, Duration 2 Years (Voluntarily Terminated Early to Join UIC); Amount: CHF 104,000

2022 AAAI Blue Sky Best Paper Award, 3rd place for 'Market Design for Drone Traffic Management'

Peer-reviewed Journal Publications

Ludwig Dierks and Sven Seuken (2022) *Cloud Pricing: The Spot Market Strikes Back*. In **Management Science** 68(1):105-122, Previously appeared as a 1-page extended abstract at EC'19;

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

Peer-reviewed Conference and Workshop Publications

Paul Friedrich, Yulun Zhang, Michael Curry, Ludwig Dierks, Stephen McAleer, Jiaoyang Li, Tuomas Sandholm, Sven Seuken (2024,) *Scalable Mechanism Design for Multi-Agent Path Finding*. In **Proceedings of the Thirty-Third International Joint Conference on Artificial Intelligence**(IJCAI'24);

Ludwig Dierks and Makoto Yokoo (2024,) *When Should Prices Stay Fixed? On the Chances and Limitations of Spot Pricing in Larger Markets*. In **Proceedings of the ACM on Measurement and Analysis of Computing Systems** (POMACS), 2-page Abstract;

Bo You, Ludwig Dierks, Taiki Todo, Minming Li and Makoto Yokoo (2022) *Strategy-Proof House Allocation with Existing Tenants over Social Networks*. In **Proceedings of the 21th International Conference on Autonomous Agents and Multiagent Systems** (AAMAS'22);

Sven Seuken, Paul Friedrich and Ludwig Dierks (2022) *Market Design for Drone Traffic Management*. In **Proceedings of the Thirty-Sixth AAAI Conference on Artificial Intelligence** (AAAI'22);

Ludwig Dierks and Sven Seuken (2020) *The Competitive Effects of Variance-based Pricing*. In **Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence (IJCAI'20)**;

Ludwig Dierks and Sven Seuken (2019) *Cloud Pricing: The Spot Market Strikes Back*. In **Proceedings of the 20th ACM Conference on Economics and Computation (EC'19)**; Extended Abstract (full version in Management Science);

Ludwig Dierks, Ian Kash and Sven Seuken (2019) *On the cluster admission problem for cloud computing*. In **Proceedings of the 14th Workshop on the Economics of Networks (NetEcon'19)**; 6-page Extended Abstract (full version in JAIR);

Book Chapters in Edited Volumes

Vincent W. Slaugh, Ludwig Dierks, Alan A. Scheller-Wolf, Andrew C. Trapp, and M. Utku Ünver. *Child Welfare Services in the United States: An Operations Research Perspective*. In: Berenguer, G., Sohoni, M.G. (eds) *Nonprofit Operations and Supply Chain Management*. Springer Series in Supply Chain Management, vol 25. Springer, Cham.

Public Working Papers

Ludwig Dierks, Vincent W. Slaugh and M. Utku Ünver (2024) *Adoption Platform Design to Improve Outcomes for Children with Disabilities*. Under Review

Ludwig Dierks, Nils Olberg, Sven Seuken, Vincent W. Slaugh and M. Utku Ünver (2024) *Search and Matching for Adoption from Foster Care*. Major Revision at Operations Research.

Ludwig Dierks and Sven Seuken (2020) *Revenue Maximization for Consumer Software: Subscription or Perpetual License?*

Unpublished Work (Under Review or In Preparation for Submission)

Ludwig Dierks, Makoto Yokoo *Information Goods: Externality-Based Upgrades and Income Effects*. Under Review

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

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

Contributions to Conferences and Workshops

- 10/20/2024 Invited Talk “Search and Matching for Adoption from Foster Care”; *Informs Annual Meeting 2025*; Atlanta, USA
- 10/20/2024 Invited Talk “Adoption Platform Design to Improve Outcomes for Children with Disabilities”; *Informs Annual Meeting 2024*; Seattle, USA
- 06/13/2024 Talk “When Should Prices Stay Fixed? On the Chances and Limitations of Spot Pricing in Larger Markets”; *ACM SIGMETRICS 2024*; Venice, Italy
- 06/09/2024 Invited Talk “When Should Prices Stay Fixed? On the Chances and Limitations of Spot Pricing in Larger Markets”; *Chicago Operations Workshop 2024*; Chicago, USA

05/02/2024 Invited Talk "When Should Prices Stay Fixed? On the Chances and Limitations of Spot Pricing in Larger Markets"; *11th Greater Chicago Area Systems Research Workshop 2024*; Chicago, USA

10/17/2023 Invited Talk "Assignment-Delay Mechanisms for UAV Airspace Assignment"; *Informs Annual Meeting 2023*; Phoenix, USA

07/09/2023 Poster "Information Goods: Externality-Based Upgrades and Income Effects"; *24th ACM Conference on Economics and Computation*; London, GB

10/18/2022 Talk "When Prices Should Stay Fixed: On The Limitations of Spot Pricing in Larger Markets"; *Informs Annual Meeting 2021*; Indianapolis, USA

10/25/2021 Invited Talk "Revenue Maximization for Consumer Software: Subscription or Perpetual License?"; *Informs Annual Meeting 2021*; Virtual

07/22/2021 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)

07/22/2021 Talk "The Competitive Effects Of Variance-based Pricing"; *6th World Congress of the Game Theory Society*; Budapest, Hungary (Virtual)

14/01/2020 Poster "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

Supervision of Students (at UZH)

03.2021-08.2021 Thesis Supervision; Bachelor Thesis of Tim Ehrenspurger

02.2019-07.2019 Thesis Supervision; Bachelor Thesis of David Lehnher

Teaching Activities

At UIC

08.2025-12.2025 Lecture: Introduction to Operations Managements

01.2025-05.2025 Lecture: Operations Managements

01.2025-05.2025 Lecture: Introduction to Operations Managements

07.2024-12.2024 Lecture: Introduction to Operations Managements

01.2024-05.2024 Lecture: Optimization for Analytics

01.2024-05.2024 Lecture: Introduction to Operations Management

08.2023-12.2023 Lecture: Introduction to Operations Management
At University of Zurich

08.2021-01.2022 Lecture: Economics and Computation

08.2020-01.2021 Lecture: Economics and Computation

02.2019-07.2019 Teaching Assistant: Market Design and Machine Learning

08.2018-01.2019 Teaching Assistant: Economics and Computation

02.2018-07.2018 Teaching Assistant: Market Design: Theory and Practice

08.2017-01.2018 Teaching Assistant: Economics and Computation

08.2016-01.2017 Teaching Assistant: Economics and Computation
At Technical University of Munich

10.2011-03.2012 Student Teaching Assistant: Discrete Structures

Scientific Reviewing Activities

Senior Program Committees:

EC'26

Program Committees:

AAAI'21, EC'22, AAAI'23, AAMAS'23, EC'23, AAMAS'24, IJCAI'24, AAMAS'25

Award Review Panels:

2025 Harvey J. Greenberg Award

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, European Journal of Operational Research, Informs Transportation Science, DAAD Prime,

Active Memberships in Scientific Societies

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

Personal Skills

Languages German (native), English (fluent)

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

Personal Information

Citizenship German

Languages German (native), English (fluent)