

# 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](mailto: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 mosaik)*, 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"; *Informing Annual Meeting 2025*; Atlanta, USA

10/20/2024 Invited Talk "Adoption Platform Design to Improve Outcomes for Children with Disabilities"; *Informing 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”; *Inform's 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”; *Inform's Annual Meeting 2021*; Indianapolis, USA
- 10/25/2021 Invited Talk “Revenue Maximization for Consumer Software: Subscription or Perpetual License?”; *Inform's 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”; *Inform's Annual Meeting 2020*; Virtual
- 10/20/2019 Invited Talk “Cloud Pricing: The Spot Market Strikes Back”; *Inform's 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”; *Inform's 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 Ehrensperger
- 02.2019-07.2019 Thesis Supervision; Bachelor Thesis of David Lehnherr

## 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, Inform's 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 Languages Python (incl. Pandas), Java, Matlab, Mathematica, C++, R, Excel/VBA

## Personal Information

Citizenship German

Languages German (native), English (fluent)