Computing & Data Sciences
Boston University
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# Kira Goldner

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## APPOINTMENTS:

**Shibulal Family Career Development Assistant Professor**                              July 2021 – Present
Faculty of Computing & Data Sciences
Boston University, Boston, MA

**Postdoctoral Research Fellow**                              July 2019 – June 2021
NSF Division of Mathematical Sciences and Columbia Data Science Institute
Columbia University, New York, NY
Host: Tim Roughgarden

**Research Fellow**                              Aug. 2019 – Oct. 2019
Online and Matching-Based Market Design Program
The Simons Institute, Berkeley, CA

## EDUCATION:

**University of Washington, Seattle, WA**                              2014 – 2019
Ph.D. in Computer Science and Engineering
Dissertation: Mechanism Design for a Complex World: Rethinking Standard Assumptions
Advisor: Anna Karlin
Masters in Computer Science and Engineering                              2016
Advisor: Anna Karlin

**Oberlin College, Oberlin, OH**                              2010 – 2014
Bachelor of Arts: Mathematics Major, Computer Science Minor

**Budapest Semesters in Mathematics, Budapest, Hungary**                              Fall 2013
*Honors*, Study Abroad

## RESEARCH INTERESTS:

My interests lie in algorithmic mechanism design and approximation, in particular, in *mechanism design for social good*, including (1) developing to the theoretical foundations of this area and (2) addressing domain-specific questions in this area, e.g. within health insurance and carbon markets. In addition, I am interested in core challenges in algorithmic mechanism design, e.g., within (3) foundational revenue maximization problems beyond single-parameter and (4) designing simple and robust yet approximately-optimal mechanisms.

## AWARDS, SCHOLARSHIPS, AND DISTINCTIONS:

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| Shibulal Family Career Development Professorship 2021-24 | 2021 |
| ACM-EC Best Presentation by a Student or Postdoctoral Researcher | 2020 |
| NSF Mathematical Sciences Postdoctoral Research Fellowship | 2019 |
| Columbia Data Science Institute Postdoctoral Fellowship | |
| ACM-EC Best Paper with a Student Leader Author | |
| Simons Institute Research Fellowship for Online and Matching Based Market-Design | |
| Microsoft Research PhD Fellowship | 2017 |
| Facebook Fellowship Finalist | |
| UW Society for Women Engineers Evening with Industry Outstanding Female Award | |

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| Google Anita Borg Memorial Scholarship | 2016 |
| NSF Graduate Research Fellowship Program: Honorable Mention | |
| National Defense in Science and Engineering Fellowship: Alternate Selectee | |
| NSF Graduate Research Fellowship Program: Honorable Mention | 2015 |
| Phi Beta Kappa | 2014 |
| NSF S-STEM Scholar in Computation and Modeling at Oberlin College | 2012 |
| John F. Oberlin merit scholarship for $25,000 annually for four years (top level awarded) | 2010 |

## CONFERENCE PUBLICATIONS:

**Private Interdependent Valuations**, with Alon Eden and Shuran Zheng. In *Proceedings of the $33^{rd}$ ACM-SIAM Symposium on Discrete Algorithms* (SODA 2022).

**On Multi-Dimensional Gains from Trade Maximization**, with Yang Cai, Steven Ma, and Mingfei Zhao. In *Proceedings of the $32^{nd}$ ACM-SIAM Symposium on Discrete Algorithms* (SODA 2021).

**Optimal Mechanism Design for Single-Minded Agents**, with Nikhil R. Devanur, Raghuvansh R. Saxena, Ariel Schvartzman, and S. Matthew Weinberg. In *Proceedings of the $21^{st}$ ACM Conference on Economics and Computation* (EC 2020).
**Best Presentation by a Student or Postdoctoral Researcher.**

**Reducing Inefficiency in Carbon Auctions with Imperfect Competition**, with Nicole Immorlica and Brendan Lucier. In *Proceedings of the $11^{th}$ Conference on Innovations in Theoretical Computer Science* (ITCS 2020).

**Bulow-Klemperer-Style Results for Welfare-Maximization in Two-Sided Markets**, with Moshe Babaioff and Yannai A. Gonczarowski. In *Proceedings of the $31^{st}$ ACM-SIAM Symposium on Discrete Algorithms* (SODA 2020).

**Combinatorial Auctions with Interdependent Valuations: SOS to the Rescue**, with Alon Eden, Michal Feldman, Amos Fiat, and Anna R. Karlin. In *Proceedings of the $20^{th}$ ACM Conference on Economics and Computation* (EC 2019).
**Best Paper with a Student Lead Author.**

**Simple and Approximately Optimal Pricing for Proportional Complementarities**, with Yang Cai, Nikhil R. Devanur, and R. Preston McAfee. In *Proceedings of the $20^{th}$ ACM Conference on Economics and Computation* (EC 2019).

**Interdependent Values without Single-Crossing**, with Alon Eden, Michal Feldman, and Amos Fiat. In *Proceedings of the $19^{th}$ ACM Conference on Economics and Computation* (EC 2018).

**Revenue Maximization with an Uncertainty-Averse Buyer**, with Shuchi Chawla, J. Benjamin Miller, and Emmanouil Pountourakis. In *Proceedings of the $29^{th}$ ACM-SIAM Symposium on Discrete Algorithms* (SODA 2018).

**A Prior-Independent Revenue-Maximizing Auction for Multiple Additive Bidders**, with Anna Karlin. In *Proceedings of the $12^{th}$ Conference on Web and Internet Economics* (WINE 2016).

**The FedEx Problem**, with Amos Fiat, Anna Karlin, and Elias Koutsoupias. In *Proceedings of the $17^{th}$ ACM Conference on Economics and Computation* (EC 2016).

**Minimal Partial Languages and Automata**, with F. Blanchet-Sadri and Aidan Shackleton. In *Proceedings of the 19th International Conference on Implementation and Applications of Automata* (CIAA 2014).

**Different Optimal Solutions in Shared Path Graphs**, with Sean McCulloch. In *Proceedings of the 2012 Midstates Conference for Undergraduate Research in Computer Science and Mathematics* (MCURCSM 2012).

## JOURNAL PUBLICATIONS:

**Combinatorial Auctions with Interdependent Valuations: SOS to the Rescue**, with Alon Eden, Michal Feldman, Amos Fiat, and Anna R. Karlin. In submission to *Mathematics of Operations Research.*

**Minimal Partial Languages and Automata**, with F. Blanchet-Sadri and Aidan Shackleton. In *RAIRO – Theoretical Informatics and Applications*, Volume 51, Number 1, 2017.

## PREPRINTS, WORKSHOP PUBLICATIONS, AND BULLETINS:

**Non-Adaptive Matroid Prophet Inequalities**, with Shuchi Chawla, Anna R. Karlin, and J. Benjamin Miller. *Preprint* 2020.

**A Report on YoungEC '19**. In *ACM SIGecom Exchanges, 18.1, July 2020.*

**When to Limit Entry Under Mandatory Purchase**, with Meryem Essaidi and S. Matthew. In *the 3rd Workshop on Mechanism Design for Social Good* (MD4SG 2019).

**Mechanism Design for Social Good**, with Rediet Abebe. In *ACM SIGAI AI Matters, 4.3, October 2018.*

**A Report on the Workshop on Mechanism Design for Social Good**, with Rediet Abebe. In *ACM SIGecom Exchanges, 16.2, June 2018.*

## CONFERENCE, WORKSHOP, TUTORIAL, AND INITIATIVE ORGANIZATION:

**The 1st ACM Conference on Equity in Algorithms, Mechanisms, and Optimization (by MD4SG)**    October 2021
Executive Committee, Virtual

**The 4th Workshop on Mechanism Design for Social Good**    August 2020
Steering Committee, Virtual

**Tutorial on the Menu Size of Precise and Approximate Revenue-Maximizing Auctions**    June 2018
Organizer and Presenter, with Yannai A. Gonczarowski at ACM-EC, Ithaca, NY

**The 2nd Workshop on Mechanism Design for Social Good**    June 2018
Organizer and PC Chair, with Rediet Abebe at ACM-EC, Ithaca, NY

**Tutorial on Mechanism Design for Social Good**    Dec. 2017
Organizer and Presenter, at WINE, Bangalore, India

**The 1st Workshop on Mechanism Design for Social Good**    June 2017
Organizer and PC Chair, with Rediet Abebe at ACM-EC, Cambridge, MA

**The Mechanism Design for Social Good Initiative**    2016-2018
Organizer and Co-Founder, with Rediet Abebe
*A multi-institutional, interdisciplinary research initiative working to improve access to opportunity
for historically undeserved and disadvantaged communities.*

## RESEARCH INTERNSHIPS AND LONG-TERM VISITS:

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| **Visitor**, Microsoft Research Herzliyah, hosted by Moshe Babaioff | Dec. 2018 – Jan. 2019 |
| **Research Intern**, Microsoft Research New England, hosted by Brendan Lucier | Summer 2018 |
| **Visitor**, Tel Aviv University, hosted by Michal Feldman and Amos Fiat | Nov. 2017 – Mar. 2018 |
| **Visitor**, Princeton University, hosted by Matt Weinberg | Oct. – Nov. 2017 |
| **Research Intern**, Microsoft Research Redmond, hosted by Nikhil Devanur | Summer 2017 |
| **Visitor**, Tel Aviv University, hosted by Michal Feldman and Amos Fiat | Jan. – Feb. 2017 |
| **Visitor**, University of Wisconsin-Madison, hosted by Shuchi Chawla | Oct. – Nov. 2016 |
| **Visitor**, The Simons Institute, hosted by the Algorithms & Uncertainty Semester | Aug. – Sept. 2016 |
| **Visitor**, The Simons Institute, hosted by the Economics & Computation Semester | Fall 2015 |
| **Undergraduate Research Assistant**, UNC Greensboro NSF REU, hosted by Francine Blanchet-Sadri | Summer 2013 |
| **Undergraduate Research Assistant**, Oberlin College, hosted by Robert Bosch | Spring 2013 |
| **Undergraduate Research Assistant**, Ohio Wesleyan NSF REU, hosted by Sean McCulloch | Summer 2012 |

## INVITED WORKSHOPS:

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| Rising Stars in EECS, UC Berkeley, Virtual | Nov. 2020 |
| Workshop on Algorithm Design, Policy, and Law, Simon's Institute, Virtual | July 2020 |
| Young Researcher Workshop on Economics and Computation, Tel Aviv University, Israel | Jan. 2020 |
| Workshop on Algorithms for Learning and Economics, Rhodes, Greece | July 2019 |
| Plenary Speaker at Data Science for Social Good Workshop, Georgia Tech, Atlanta, GA | Apr. 2019 |
| Northwestern Quarterly Theory Workshop, Evanston, IL | Nov. 2018 |
| Bellairs Workshop on Algorithmic Game Theory, Holetown, Barbados | Apr. 2018 |
| Heidelberg Laureate Forum, Heidelberg, Germany | Sept. 2017 |
| Greece Economic and Algorithmic Theory Week, Ikaria, Greece | July 2017 |
| Young Researcher Workshop on Economics and Computation, Tel Aviv University, Israel | Jan. 2017 |
| Women in Theory Workshop, Berkeley, CA | May 2016 |
| CRA-W Grad Cohort Conference, San Francisco, CA | Apr. 2015 |

## INVITED TALKS:

### Mechanism Design for Social Good

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| TCS+ Online Seminar, Virtual | May 2021 |
| Toyota Technical Institute of Chicago Colloquium, Virtual | Mar. 2021 |
| Boston University Faculty of CDS Colloquium, Virtual | Mar. 2021 |
| Rutgers CS Department Colloquium, Virtual | Mar. 2021 |
| University of Maryland CS Department Colloquium, Virtual | Feb. 2021 |
| Ben Gurion University CS Department Colloquium, Virtual | Feb. 2021 |
| Bar Ilan University CS Department Colloquium, Virtual | Jan. 2021 |
| Georgia Tech School of CS Colloquium, Virtual | Jan. 2021 |
| Northeastern School of CS Colloquium, Virtual | Jan. 2021 |
| Cornell Operations Research and Industrial Engineering Colloquium, Virtual | Jan. 2021 |
| Tel Aviv University Colloquium, Virtual | Jan. 2021 |
| IDC Herzliya Colloquium, Virtual | Dec. 2020 |
| Columbia Data Science Institute Data & Society Council, Virtual | Dec. 2020 |

NYU Tandon CS Department Seminar, Virtual
Oct. 2020

Worcester Polytechnic Institute CS Department Colloquia Series, Virtual
Sept. 2020

Data Science Institute and Data for Good Scholars Weekly Meetup Series, Columbia, Virtual
July 2020

Technion Game Theory Playtime Seminar, Haifa, Israel
Dec. 2019

Washington University CS Department Colloquia Series, St. Louis, MO
Nov. 2019

Workshop on Algorithms for Learning and Economics, Rhodes, Greece
July 2019

Data Science for Social Good Workshop, Georgia Tech, Atlanta, GA
Apr. 2019

### Interdependent Valuations: Beyond Single-Crossing and Single-Item

1$^{st}$ Annual SIGecom Winter Meeting, Virtual
Mar. 2021

MIT Algorithms and Complexity Seminar, Cambridge, MA
Oct. 2019

Stanford Theory Seminar, Palo Alto, CA
May 2019

### Maximizing Gains From Trade in Two-Sided Markets

Online and Matching-Based Market Design Reunion, Simons Institute, Virtual
Mar. 2021

Weizmann Theory Seminar, Virtual
Jan. 2021

Israel Algorithmic Game Theory Seminar, Virtual
Dec. 2020

INFORMS Annual Meeting, Virtual
Nov. 2020

University of Maryland CATS Lecture Series, Virtual
Oct. 2020

Harvard TOC Seminar, Virtual
Sept. 2020

### Optimal Mechanism Design for Single-Minded Agents

Conference on Web and Internet Economics, Virtual
Dec. 2020

ACM Conference on Economics and Computation, Virtual
June 2020

INFORMS Annual Meeting, Phoenix, AZ
Nov. 2018

Georgia Tech ACO Student Seminar, Atlanta, GA
Apr. 2018

UW Theory Seminar, Seattle, WA
Apr. 2018

Hebrew University of Jerusalem Computation and Economics Seminar, Jerusalem, Israel
Jan. 2018

Tel Aviv University Algorithms Seminar, Tel Aviv, Israel
Dec. 2017

### Interdimensional Mechanism Design

STOC TCS Women Spotlight Workshop "Rising Star" Talk, Virtual
June 2020

Northwestern Quarterly Theory Workshop, Evanston, IL
Nov. 2018

UW Allen School Colloquium, Seattle, WA
Oct. 2018

AmosFest, Tel Aviv, Israel
Nov. 2017

### Reducing Inefficiency in Carbon Auctions with Imperfect Competition

Innovations in Theoretical Computer Science, Seattle, WA
Jan. 2020

Young Researcher Workshop on Economics and Computation, Tel Aviv University, Israel
Jan. 2020

Social Responsibility of Algorithms Interdisciplinary Workshop, Paris, France
Dec. 2019

Marketplace Innovation Workshop, Palo Alto, CA
June 2019

Data Science for Social Good Workshop, Atlanta, GA
Apr. 2019

### Simple and Approximately Optimal Pricing for Proportional Complementarities

ACM Conference on Economics and Computation, Phoenix, AZ
June 2019

Minisymposium on Algorithmic Game Theory at CANADAM, Vancouver, BC, Canada
May 2019

Hebrew University of Jerusalem Computation and Economics Seminar, Jerusalem, Israel
Jan. 2019

INFORMS Annual Meeting, Phoenix, AZ
Nov. 2018

**Interdependent Values without Single-Crossing**

Bellairs Workshop on Algorithmic Game Theory, Barbados — Apr. 2018

**The FedEx Problem**

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|---|---|
| Princeton Mechanism Design Reading Group, Princeton, NJ | Oct. 2017 |
| Conference of the International Federation of Operational Research Societies, Quebec, Canada | July 2017 |
| STOC Workshop on Bayesian Mechanism Design, Montreal, Canada | June 2017 |
| Hebrew University of Jerusalem Lo Letzitot Seminar, Jerusalem, Israel | Jan. 2017 |
| Weizmann Institute Foundations of Computer Science Seminar, Rehovot, Israel | Jan. 2017 |
| Young Researcher Workshop on Economics and Computation, Tel Aviv, Israel | Jan. 2017 |
| UW-Madison Theory Seminar, Madison, WI | Nov. 2016 |
| Microsoft Research Theory Seminar, Redmond, WA | Oct. 2016 |
| UC Berkeley Theory Lunch, Berkeley, CA | Sept. 2016 |
| Stanford University Theory Lunch, Palo Alto, CA | Sept. 2016 |
| ACM Conference on Economics and Computation, Maastricht, Netherlands | July 2016 |
| Google Scholar's Retreat, Mountain View, CA | June 2016 |
| UW Theory Seminar, Seattle, WA | May 2016 |

**Revenue Maximization with an Uncertainty-Averse Buyer**

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|---|---|
| Microsoft Research Theory Lunch, Redmond, WA | Sept. 2017 |
| UW Theory Lunch, Seattle, WA | May 2017 |

**A Prior-Independent Revenue-Maximizing Auction for Multiple Additive Bidders**

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|---|---|
| Conference on Web and Internet Economics, Montreal, Canada | Dec. 2016 |
| UW Theory Seminar, Seattle, WA | Jan. 2016 |

**Incentives and the Bitcoin Protocol**

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| Heidelberg Laureate Forum: Workshop on Transactions and Blockchains, Heidelberg, Germany | Sept. 2017 |
| UW CSE Women's Day, Seattle, WA | Jan. 2016 |
| UW CSE Women's Day, Seattle, WA | May 2015 |
| CRA-W Grad Cohort, San Francisco, CA | Apr. 2015 |

**Minimal Partial Language and Automata**

Conference on Implementation and Application of Automata, Germany — July 2014

**Different Optimal Solutions in Shared Path Graphs**

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|---|---|
| Midstates Conference for Undergraduate Research in Computer Science and Mathematics | Nov. 2012 |
| 5 Colleges of Ohio Summer Research Symposium | July 2012 |

## SERVICE AND OUTREACH:

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| **Social Chair** for EC '21 | 2021 |
| **Program Committee** for ITCS '22, FORC '21, EC '21 | 2021 |
| **External Reviewer** for FC '22, SAGT '21 | 2021 |
| **Member,** Columbia DEI Committee and Bits for Justice addressing Systemic Anti-Black Racism | 2020 |
| **Program Committee** for ITCS '21, EC '20, WINE '20, Tackling Climate Change with ML at ICLR 2020 | 2020 |
| **Ambassador** for Global Challenges in Economics and Computation | 2020 |
| **External Reviewer** for GEB, SODA '21, FOCS '20 | 2020 |
| **Program Committee** for AAAI '20, EC '19, NetEcon '19, MD4SG '19 (Theory area chair) | 2019 |
| **External Reviewer** for JACM, JAIR, SODA '20, FOCS '19 | 2019 |

**Program Committee** for AIES '19                                                                          2018

**External Reviewer** for TEAC, STOC '19, ITCS '19, SODA '19, WINE '18, ESA '18                         2018

**Member**, PhD Admissions Committee, University of Washington CSE                                 2017 – 2019

**External Reviewer** for STOC '18, SODA '18, WINE '17, ESA '17, ICALP '17                             2017

**External Reviewer** for IPCO '17, STACS '17, SODA '17, WINE '16, EC '16                              2016

**Co-Chair**, Graduate Women's Organization, University of Washington CSE                          2015 – 2016

**Co-Chair**, Graduate Prospective Student Committee, University of Washington CSE

**Founder and Mentor**, Mentoring Program for Undergraduate Women, University of Washington CSE

**Member**, Graduate Prospective Student Committee, University of Washington CSE                   2014 – 2015

**Founder and Co-Chair**, Women in Math and Computer Science, Oberlin College                     Spring 2014

## TEACHING ASSISTANTSHIPS:

Applied Algorithms (Professional Masters Program), University of Washington                       Spring 2015

Foundations of Computing II, University of Washington                                            Fall 2014

Theory of Computer Science, Oberlin College                                                     Spring 2014

Introduction to Computer Science, Oberlin College                                               Spring 2013

Introduction to Computer Science, Oberlin College                                               Spring 2012