

Computing & Data Sciences  
Boston University  
goldner@bu.edu

# 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

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## 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

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## 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) rethinking standard behavioral and informational assumptions and (4) foundational revenue maximization problems beyond single-parameter.

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## AWARDS, SCHOLARSHIPS, AND DISTINCTIONS:

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

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

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## CONFERENCE PUBLICATIONS:

**Constant Approximation for Private Interdependent Valuations**, with Alon Eden, Michal Feldman, Simon Mauras, and Divyarthi Mohan. In *Proceedings of the 2023 IEEE 64th Annual Symposium on Foundations of Computer Science (FOCS 2023)*.

**Private Interdependent Valuations**, with Alon Eden and Shuran Zheng. In *Proceedings of the 33<sup>rd</sup> 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<sup>nd</sup> ACM-SIAM Symposium on Discrete Algorithms (SODA 2021)*.

**Optimal Mechanism Design for Single-Minded Agents**, with Nikhil R. Devanur, Raghuvansh R. Saxena, Ariel Schwartzman, and S. Matthew Weinberg. In *Proceedings of the 21<sup>st</sup> 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<sup>th</sup> 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<sup>st</sup> 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<sup>th</sup> 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<sup>th</sup> 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<sup>th</sup> 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<sup>th</sup> 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<sup>th</sup> Conference on Web and Internet Economics (WINE 2016)*.

**The FedEx Problem**, with Amos Fiat, Anna Karlin, and Elias Koutsoupias. In *Proceedings of the 17<sup>th</sup> ACM Conference on Economics and Computation (EC 2016)*.

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

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## JOURNAL PUBLICATIONS:

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**Combinatorial Auctions with Interdependent Valuations: SOS to the Rescue**, with Alon Eden, Michal Feldman, Amos Fiat, and Anna R. Karlin. In *Mathematics of Operations Research*, 2023.

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

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## PREPRINTS, WORKSHOP PUBLICATIONS, AND BULLETINS:

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**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 3<sup>rd</sup> 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.

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## GRANTS:

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**NSF Award #2228610** 10/2022 – 3/2023

Project Title: Economic Resiliency through Mechanism Design and Secure Computing: MainStreetPulse: An Early Warning Platform for Monitoring and Supporting Main Street Businesses

Role: PI; joint with Mayank Varia (BU), Ziba Cranmer (BU), and Langdon White (BU)

Amount: \$50k

**NSF Mathematical Sciences Postdoctoral Research Fellowship Award #1903037** 7/2019 – 6/2021

Project Title: Mechanism Design for Social Good

Role: PI

Amount: \$150k

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## RESEARCH MENTORING:

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**Freddy Reiber** 09/2022-Present

Interests: mechanism design without money

**Bhushan Suwal** 05-12/2022

Interests: algorithmic fairness, strategic agents

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## TEACHING:

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**Boston University DS 320: Algorithms for Data Science**

*Undergraduate course on algorithmic design and analysis with additional focus on techniques for big data, new self-developed course*

30 students, instructor rating 4.31/5.0

Spring 2023

6 students, instructor rating 4.5/5.0

Spring 2022

**Boston University DS 574: Algorithmic Mechanism Design**

*Ph.D. level course on Algorithmic Mechanism Design, new self-developed course*

15 students, instructor rating 4.42/5.0

Fall 2022

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**RESEARCH INTERNSHIPS AND LONG-TERM VISITS:**

<b>Visitor</b> , Microsoft Research Herzliyah, hosted by Moshe Babaioff	Winter 2019
<b>Research Intern</b> , Microsoft Research New England, hosted by Brendan Lucier	Summer 2018
<b>Visitor</b> , Tel Aviv University, hosted by Michal Feldman and Amos Fiat	Winter 2017, Winter–Spring 2018
<b>Visitor</b> , Princeton University, hosted by Matt Weinberg	Oct.–Nov. 2017
<b>Research Intern</b> , Microsoft Research Redmond, hosted by Nikhil Devanur	Summer 2017
<b>Visitor</b> , University of Wisconsin-Madison, hosted by Shuchi Chawla	Oct.–Nov. 2016
<b>Visitor</b> , The Simons Institute, hosted by the Algorithms & Uncertainty Semester	Aug.–Sept. 2016
<b>Visitor</b> , The Simons Institute, hosted by the Economics & Computation Semester	Fall 2015

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**INVITED TALKS:**

**Mechanism Design: Toward a Positive Social Impact**

ACM EC Gender Inclusion Workshop, London, UK	July 2023
DIMACS Workshop on Algorithm and Mechanism Design for Achieving the UN SDGs, Rutgers, NJ	May 2023

**A Constant Approximation for Private Interdependent Valuations**

Workshop on Algorithms, Learning, and Games (ALGA 2023), Sicily, Italy	June 2023
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**Private Interdependent Valuations**

CIREQ Montreal Microeconomic Theory Conference, Montreal, CA	Oct. 2022
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**Mechanism Design for Social Good**

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
<b>Interdependent Valuations: Beyond Single-Crossing and Single-Item</b>	
1 <sup>st</sup> Annual SIGecom Winter Meeting, Virtual	Mar. 2021
MIT Algorithms and Complexity Seminar, Cambridge, MA	Oct. 2019
Stanford Theory Seminar, Palo Alto, CA	May 2019
<b>Maximizing Gains From Trade in Two-Sided Markets</b>	
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
<b>Optimal Mechanism Design for Single-Minded Agents</b>	
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
<b>Interdimensional Mechanism Design</b>	
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
<b>Reducing Inefficiency in Carbon Auctions with Imperfect Competition</b>	
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
Plenary Talk, Data Science for Social Good Workshop, Atlanta, GA	Apr. 2019
<b>Simple and Approximately Optimal Pricing for Proportional Complementarities</b>	
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
<b>Interdependent Values without Single-Crossing</b>	
Bellairs Workshop on Algorithmic Game Theory, Barbados	Apr. 2018
<b>The FedEx Problem</b>	

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 Letzivot 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**

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**

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

### **Incentives and the Bitcoin Protocol**

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
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## **PROFESSIONAL SERVICE AND OUTREACH:**

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### **Co-Creator of the Women-in-TCS Information**

Initiative from the Committee for the Advancement of Theoretical Computer Science (CATCS)	2022
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### **Executive Committee**

The ACM Conference on Equity in Algorithms, Mechanisms, and Optimization (EAAMO, by MD4SG)	2021-23
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### **Tutorial Organizer and Presenter**

On the Menu Size of Precise and Approximate Revenue-Maximizing Auctions at EC, Ithaca, NY	June 2018
On Mechanism Design for Social Good, at WINE, Bangalore, India	Dec. 2017

### **Workshop Organizer**

Co-Organizer, The 2 <sup>nd</sup> Workshop on Algorithms for Learning and Economics (WALE '22)	June 2022
Social Chair, ACM Conference on Economics and Computation (EC '21)	July 2021
Steering Committee, The 4 <sup>th</sup> Workshop on Mechanism Design for Social Good	Aug. 2020
Co-Organizer and PC Chair, The 2 <sup>nd</sup> Workshop on Mechanism Design for Social Good	June 2018
Co-Organizer and PC Chair, The 1 <sup>st</sup> Workshop on Mechanism Design for Social Good	June 2017

### **Initiative Co-Founder and Organizer**

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

### **Program Committees and Reviewing**

Program Committee for SOSA '23 2023  
Area Chair of Program Committee for EC '23  
External Reviewer for FOCS, NSF CISE Panel  
Program Committee for SODA '23 2022  
External Reviewer for ISF, Schmidt Futures  
Program Committee for ITCS '22, FORC '21, EC '21 2021  
External Reviewer for STOC '22, FC '22, SAGT '21  
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  
External Reviewer for GEB, SODA '21, FOCS '20  
Program Committee for AAI '20, EC '19, NetEcon '19, MD4SG '19 (Theory area chair) 2019  
External Reviewer for JACM, JAIR, SODA '20, FOCS '19  
Program Committee for AIES '19 2018  
External Reviewer for TEAC, STOC '19, ITCS '19, SODA '19, WINE '18, ESA '18  
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

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### **INTERNAL ACTIVITIES:**

#### **Boston University Faculty of Computing and Data Sciences**

**Member**, Faculty Interview Committee 2022 – 2023  
**Member**, PhD Admissions Committee  
**Member**, PhD Admissions Committee 2021 – 2022  
**Member**, Tenure-Track Hiring Committee

#### **Columbia University Department of Computer Sciences**

**Member**, Bits for Justice addressing Systemic Anti-Black Racism 2020

#### **University of Washington School of Computer Science and Engineering**

**Member**, PhD Admissions Committee 2017 – 2019  
**Co-Chair**, Graduate Women's Organization 2015 – 2016  
**Co-Chair**, Graduate Prospective Student Committee  
**Founder and Mentor**, Mentoring Program for Undergraduate Women  
**Member**, Graduate Prospective Student Committee 2014 – 2015