

# DARRELL HOY

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Technologist, researcher and entrepreneur at the intersection of Computer Science and Economics, excited by designing, implementing and understanding auctions and markets in complicated, real world environments

## Industry

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<b>Tremor Technologies</b> , Greenwich, CT <i>CTO</i>	2017 - Present
<b>Tremor Technologies</b> , Greenwich, CT <i>Market Design Engineer -&gt; Head of Product</i>	2017
<b>Cramton Associates</b> , Bethesda, MD <i>Principal</i>	2015 - 2017
<b>SweetOpenRoads.com</b> <i>Founder</i>	2010
<b>Bridgewater Associates</b> , Westport, CT <i>Technology Associate</i>	2007 - 2010

## Education

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<b>Northwestern University</b> , Evanston IL Ph.D. in Electrical Engineering & Computer Science Thesis: Strategic Computation Via Non-Revelation Mechanism Design Advisor: Jason Hartline Committee: Jason Hartline, Nicole Immorlica, David Parkes, Denis Nekipelov	2010 - 2015
<b>Dartmouth College</b> , Hanover NH B.A. in Computer Science and Mathematics Honors Thesis: Atomic Splittable Nash Equilibria in Network Flow Games Advisor: Lisa Fleischer	2003 - 2007

## Publications

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### Journal publications

1. Umang Bhaskar, Lisa Fleischer, Darrell Hoy and Chien-Chung Huang. "On the Uniqueness of Equilibrium in Atomic Splittable Routing Games." *Mathematics of Operations Research* 2015, 40:3. A preliminary version appeared in SODA 2009 (below).

### Conference Publications (refereed)

2. Darrell Hoy, Sam Taggart, and Zihe Wang. "A Tighter Welfare Guarantee for First-Price Auctions." To appear, STOC 2018.
3. Darrell Hoy, Denis Nekipelov, and Vasilis Syrgkanis. "Efficiency Guarantees from Data." NIPS 2017.
4. Darrell Hoy, Nicole Immorlica, and Brendan Lucier. "On-demand or Spot? Selling the cloud to risk-averse customers." WINE 2016.
5. Darrell Hoy and Evdokia Nikolova. "Approximately Optimal Risk-averse Routing Policies via Adaptive Discretization." AAAI 2015.
6. Jason Hartline, Darrell Hoy and Sam Taggart. "Price of Anarchy for Auction Revenue." ACM EC 2014.
7. Hu Fu, Jason Hartline and Darrell Hoy. "Prior-independent auctions for risk-averse agents." ACM EC 2013.

8. Darrell Hoy, Kamal Jain and Chris Wilkens. "A dynamic axiomatic approach to first-price auctions." ACM EC 2013.
9. Umang Bhaskar, Lisa Fleischer, Darrell Hoy and Chien-Chung Huang. "Equilibria of atomic flow games are not unique." SODA 2009.

#### Workshop papers

10. Darrell Hoy, Denis Nekipelov and Vasilis Syrgkanis. "Price of Anarchy from Data." Workshop on AGT and Data Science at ACM EC 2015.
11. Elizabeth Churchill, Darrell Hoy, Atish Das Sarma and Kamal Jain. "Shopping with Bonus Money: eBay, loyalty schemes and consumer spending." CHIMoney Workshop at ACM CHI 2014.
12. Darrell Hoy, Kamal Jain and Chris Wilkens. "Coopetitive Ad Auctions." ACM EC 2013 Workshop on Ad Auctions.
13. Darrell Hoy. "The concavity of atomic splittable congestion games with non-linear utility functions." ACM EC 2012 Workshop on Risk Aversion in Algorithmic Game Theory and Mechanism Design.

#### Talks

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- "Price of Anarchy for Auction Revenue," *ISMP*, July 2015.
- "Robust Guarantees for Auction Revenue," *Dartmouth CS Colloquium*, Hanover, NH. October 2014.
- "Single-item FPA Bayes-Nash PoA  $\in [1.15, e/(e-1)]$ ," *Greece Economic and Algorithmic Theory Week*, Paros, Greece. July 2014.
- "Price of Anarchy for Auction Revenue," *Social Choice and Welfare Conference*, Boston, MA. June 2014.
- "Price of Anarchy for Auction Revenue," *University of Toronto CS Theory Seminar*, Toronto, ON. April 2014.
- "Price of Anarchy for Auction Revenue," *University of Texas WNCG Simons Lecture Series*, Austin, TX. April 2014.
- "Utility-Target Auctions," *Harvard EconCS Seminar*, Cambridge, MA. April 2014.
- "Revenue Guarantees for Auction Equilibria," *MSR-NE Game Theory Seminar*, Cambridge, MA. March 2014.
- "Revenue in Bayes-Nash Equilibrium," *UC Berkeley EconCS Seminar*, Berkeley, CA. January 2014.
- "Revenue in Equilibria of Non-Truthful Auctions," *AGT Group Meeting*, Stanford, CA. February 2014.
- "Revenue in Equilibria of Non-Truthful Auctions," *IBM-Almaden Seminar*, Berkeley, CA. February 2014.
- "Prior-Independent Auctions for Risk Averse Agents," *China Theory Week*, Aarhus, Denmark. July 2013.
- "Simple Auctions for Risk Averse Agents," *Midwest Theory Day*, Chicago, IL. May 2013.

#### Professional Service

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Journal reviewer: Computers & Operations Research, OR Letters, Games and Economic Behavior  
Program Committee: EC 2015  
Conference sub-referee: WINE, ESA, ATMOS