

Soumya Basu

Graduate Student
440 Gates Hall, Ithaca, NY, 14853

Updated: July 13, 2022

soumya@cs.cornell.edu
cs.cornell.edu/~soumya

Education

Cornell University Ithaca, NY
PhD Computer Science 2015 - 2022

- Advisor: Emin Gün Sirer

Cornell University Ithaca, NY
MS Computer Science May 2019

University of California at Berkeley Berkeley, CA
BS Computer Science Engineering, Minor in Mathematics 2011 - 2015

Awards, Grants & Honors

CBER Conference Best Paper Award	2021
NSF GRFP Fellowship	2016
Outstanding Teaching Assistant, Cornell University	2016
ACM SIGCOMM Best Student Paper Award	2015
Putnam Competition Honor Roll	2012, 2013, 2015
Eta Kappa Nu Member and Officer	2012-Present
Regents' and Chancellors' Scholarship	2011

Refereed Publications

StableFees: A Predictable Fee Market for Cryptocurrencies. Soumya Basu, David Easley, Maureen O'Hara, Emin Gn Sirer.

Soumya Basu, David Easley, Maureen O'Hara, Emin Gün Sirer. *StableFees: A Predictable Fee Market for Cryptocurrencies*. In *Management Science*, forthcoming.

Soumya Basu, Alin Tomescu, Ittai Abraham, Dahlia Malkhi, Michael K. Reiter, Emin Gün Sirer. *Efficient Verifiable Secret Sharing with Share Recovery in BFT Protocols*. In *Proc. ACM Conference on Computer and Communications Security (CCS)*, 2019. Soumya Basu, Emin Gün Sirer. *Trustless IoT: A Logic-Driven Architecture for IoT Hubs*. In *Workshop on Hot Topics in Edge Computing (HotEdge)*, 2020.

Soumya Basu, Alin Tomescu, Ittai Abraham, Dahlia Malkhi, Michael K. Reiter, Emin Gün Sirer. *Efficient Verifiable Secret Sharing with Share Recovery in BFT Protocols*. In *Proc. ACM Conference on Computer and Communications Security (CCS)*, 2019.

David Easley, Maureen O'Hara, Soumya Basu. *From Mining to Markets: The Evolution of Bitcoin Transaction Fees*. *Journal of Financial Economics (JFE)*, 2019.

Adem Efe Gencer, Soumya Basu, Ittay Eyal, Robbert van Renesse, Emin Gün Sirer. *Decentralization in Bitcoin and Ethereum Networks*. In *Proc. Financial Cryptography and Data Security Conference (FC)*,

2018.

Aman Agarwal, Soumya Basu, Tobias Schnabel, Thorsten Joachims. *Effective Evaluation using Logged Bandit Feedback from Multiple Loggers*. In *Proc. ACM International Conference on Knowledge Discovery and Data Mining (KDD)*, 2017.

Justine Sherry, Peter Gao, Soumya Basu, Aurojit Panda, Arvind Krishnamurthy, Christian Macciocco, Maziar Manesh, Joao Martins, Sylvia Ratnasamy, Luigi Rizzo, Scott Shenker. *Rollback Recovery for Middleboxes*. In *Proc. ACM SIGCOMM*, 2015. **Awarded Best Student Paper**

Soumya Basu, Brian Hou, Albert Wu, John DeNero. *Problems Before Solutions: Automated Problem Clarification at Scale*. In *Proc. ACM Learning at Scale (L@S)*, 2015.

Preprints and Tech Reports

Sishan Long, Soumya Basu, Emin Gün Sirer. *Measuring Miner Decentralization in Proof-of-Work Blockchains*. arXiv:2203.16058 [cs.CR], 2022.

Srinath Setty, Soumya Basu, Lidong Zhou, Michael L. Roberts, Ramarathnam Venkatesan. *Enabling secure and resource-efficient blockchain networks with VOLT*. Microsoft Research Technical Report MSR-TR-2017-38, 2017.

Presentations

Soumya Basu, David Easley, Maureen O'Hara, Emin Gün Sirer. *Stable Fees: A Predictable Fee Market for Cryptocurrencies*. In *INFORMS Annual Meeting*, 2021.

Soumya Basu, **David Easley**, Maureen O'Hara, Emin Gün Sirer. *Stable Fees: A Predictable Fee Market for Cryptocurrencies*. In *Proc. Crypto and Blockchain Economics Research (CBER) Conference*, 2020. **Awarded Best Paper**

Soumya Basu, David Easley, Maureen O'Hara, Emin Gün Sirer. *Towards a Functional Fee Market for Cryptocurrencies*. In *Tokenomics*, 2019.

David Easley, Maureen O'Hara, **Soumya Basu**. *From Mining to Markets: The Evolution of Bitcoin Transaction Fees*. *RFS Fintech Conference*, 2018.

Justine Sherry, Peter Gao, **Soumya Basu**, Aurojit Panda, Arvind Krishnamurthy, Christian Macciocco, Maziar Manesh, Joao Martins, Sylvia Ratnasamy, Luigi Rizzo, Scott Shenker. *Rollback Recovery for Middleboxes*. In *EECS Undergraduate Research Symposium*, 2015.

Talks

StableFees: A Predictable Fee Market for Cryptocurrencies

Virtual

<i>INFORMS Annual Meeting</i>	October 25, 2021
Towards a Functional Fee Market for Cryptocurrencies <i>Tokenomics</i>	Paris, France May 7, 2019
bloXroute: A Network for Tomorrow's Blockchain <i>IC3 Winter Retreat</i>	Interlaken, Switzerland February 14, 2019
bloXroute: A Network for Tomorrow's Blockchain <i>Stanford Blockchain Conference</i>	Palo Alto, CA January 30, 2019
The Long Forgotten Network Layer: A Retrospective and Future Directions <i>UW Blockchain Expo</i>	Seattle, WA October 13, 2018
bloXroute: A Network for Tomorrow's Blockchain <i>BLOCKCON 2018</i>	Santa Monica, CA October 11, 2018
Decentralization in Bitcoin and Ethereum Networks. <i>IC3 Spring Retreat</i>	New York City, NY May 10, 2018
Decentralization in Bitcoin and Ethereum Networks. <i>Financial Cryptography and Data Security Conference</i>	Willemstad, Curaçao February 28, 2018
Falcon Network Update <i>IC3 Fall Retreat</i>	New York City, NY October 5, 2017
Falcon Network: A High-Performance, Wide Area Interconnect <i>IC3 Winter Retreat</i>	San Francisco, CA Feb 24, 2017
Falcon Network: A High-Performance, Wide Area Interconnect <i>IC3 Retreat</i>	New York City, NY May 17, 2016
Distributed Systems <i>Guest Lecture for CS 61A. Host: John DeNero.</i> CS 61A is called Structure and Interpretation of Computer Programs.	Berkeley, CA April 24, 2015
Problems Before Solutions: Automated Problem Clarification at Scale <i>Second ACM Conference on Learning at Scale (L@S)</i>	Vancouver, BC March 15, 2015
Huffman Encoding <i>Guest Lecture for CS 61A. Host: John DeNero.</i>	Berkeley, CA February 19, 2015
Distributed Systems <i>Guest Lecture for CS 61A. Host: John DeNero.</i>	Berkeley, CA November 11, 2014
Iterators <i>Guest Lecture for CS 61A. Host: Amir Kamil.</i>	Berkeley, CA April 15, 2013

Teaching Experience

Teaching Assistant, CS 4410/4411: Operating Systems

Cornell University under Michael George and Emin Gün Sirer

Ithaca, NY

Jan 2016-May 2016

- Was the 4411 Head TA
- Ran two office hours per week.

Teaching Assistant, CS 4410/4411: Operating Systems

Cornell University under Anne Bracy and Robbert Van Renesse

Ithaca, NY

Aug 2015-Dec 2015

- Ran two office hours per week.
- Helped create a new project on building a simple networking stack.

Teaching Assistant, CS 61A

University of California, Berkeley under John DeNero

Berkeley, CA

Jan 2015-May 2015

- CS 61A is called Structure and Interpretation of Computer Programs.
- Responsible for grading all homework, project and labs for about 1000 students through the ok autograding system.
- Ran one lab, one discussion section, and two office hours per week.
- *Student evaluation Overall Teaching effectiveness: 4.7/5*

Teaching Assistant, CS 61A

University of California, Berkeley under John DeNero

Berkeley, CA

Aug 2014-Dec 2014

- Led transition to and development of ok autograding system.
- Ran one lab, one discussion section, and one office hour per week.
- *Student evaluation Overall Teaching effectiveness: 4.9/5*

Reader, CS 70: Discrete Mathematics and Probability Theory

University of California, Berkeley under James Cook

Berkeley, CA

May 2014-Aug 2014

- Responsible for grading student homework assignments.

Teaching Assistant, CS 61A

University of California, Berkeley under Paul Hilfinger

Berkeley, CA

Jan 2014-May 2014

- Ran two labs, one discussion section, and two office hours per week.
- *Student evaluation Overall Teaching effectiveness: 4.4/5*

Teaching Assistant, CS 61A

University of California, Berkeley under John DeNero

Berkeley, CA

Aug 2013-Dec 2013

- Ran two labs, two discussion sections, and two office hours per week.
- *Student evaluation Overall Teaching effectiveness: 4.4/5*

Teaching Assistant, CS 61A

University of California, Berkeley under Amir Kamil

Berkeley, CA

Jan 2013-May 2013

- Ran two labs, two discussion sections, and two office hours per week.
- *Student evaluation Overall Teaching effectiveness: 4.3/5*

Reader, CS 61A

University of California, Berkeley under John DeNero

Berkeley, CA

Aug 2012-Dec 2012

- Responsible for grading student code for composition quality.
- Met with students to help their code composition.

Industry Experience

- Co-founder and CTO, bloXroute Labs Inc.** Chicago, IL
Aug 2017-June 2019
- Research Intern, VMWare Research Group** Palo Alto, CA
VMWare, Inc., Mentor: Dahlia Malkhi
May 2017-Aug 2017
- Research Intern, Systems Research Group** Redmond, WA
Microsoft Corporation, Mentor: Srinath Setty
May 2016-Aug 2016
- Software Developer Intern, Chrome OS Team** Mountain View, CA
Google Inc.
May 2014-Aug 2014
- Software Developer Intern, Outlook.com Team** Mountain View, CA
Microsoft Corporation
May 2013-Aug 2013

Community

- CS PhD Visit Day Czar** Ithaca, NY
Cornell University
Jan 2016-March 2016
- Helped run the Cornell CS PhD Visit Day
- Eta Kappa Nu Corresponding Secretary** Berkeley, CA
University of California, Berkeley
Jan 2013-Dec 2013
- Ran anonymized course surveys for the entire Berkeley EECS department for Spring 2013 and Fall 2013 semesters.
- Eta Kappa Nu Industrial Relations Officer** Berkeley, CA
University of California, Berkeley
Aug 2012-Dec 2012
- Ran info sessions on behalf of Eta Kappa Nu to help companies recruit members from the Berkeley EECS community.
- Berkeley Math Tournament Coordinator** Berkeley, CA
University of California, Berkeley
Jan 2012-May 2012
- Founded a new math tournament at Berkeley campus for high school students similar to Harvard-MIT Mathematics Tournament and Stanford Math Tournament.
 - 188 participants in first competition. Currently hosts two tournaments per year, BmMT, which has about 700 middle school students competing and, BMT, which has about 1200 high school students competing.