

Swapneel Sheth

Department of Computer and Information Science, University of Pennsylvania
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Education

Columbia University, New York, NY

Ph.D. in Computer Science, December 2013

Thesis title: “Exploring Societal Computing based on the Example of Privacy”

Advisor: Professor Gail Kaiser

Columbia University, New York, NY

MS in Computer Science, December 2007 (GPA 4.1/4.0)

Mumbai University, Sardar Patel College of Engineering, Mumbai, India

BE in Computer Engineering, May 2006 (69%, 2nd in class)

Research Interests

Computer science education, software engineering, privacy, social software engineering

Awards and Honors

Hatfield Award for Excellence in Teaching in the Lecturer and Practice Professor Track, University of Pennsylvania, Department of Computer and Information Science. This award recognizes outstanding teaching ability, dedication to innovative undergraduate instruction, and exemplary service to the School in consistently inspiring students in the engineering and scientific profession. 2019.

SIGCSE Exemplary Paper, *A Two-Course Sequence of Real Projects for Real Customers* by C. Murphy, S. Sheth, S. Morton. Proc. of the 48th ACM Technical Symposium on Computing Science Education (SIGCSE), Seattle, WA, March 2017.

Paul Charles Michelman Memorial Award for Exemplary Service, Columbia University, Department of Computer Science. Given to a Ph.D. student who has performed exemplary service to the department, devoting time and effort beyond the call to further the departments goals. 2013.

Andrew P. Kosoresow Memorial Award for Excellence in Teaching and Service, Columbia University, Department of Computer Science. Given to a Ph.D. student for outstanding contributions to teaching in the Department and exemplary service to the Department and its mission. 2011.

University of Szeged Special Support Grant for PhD Working Groups, 8th Joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering, ESEC/FSE. 2011.

Teaching Experience

Courses taught at the University of Pennsylvania

- NETS 150 Market and Social Systems on the Internet: Spring 2023, Spring 2022, Spring 2021, Spring 2020, Spring 2019, Spring 2018, Spring 2017, Spring 2016, Spring 2015, Spring 2014
- CIS 559 Programming and Problem Solving: Spring 2023, Spring 2022, Spring 2021, Spring 2020, Spring 2018, Fall 2015, Fall 2014
- CIS 120 Programming Languages and Techniques I: Fall 2022, Fall 2021, Fall 2020, Fall 2019, Fall 2018, Fall 2017
- CIT 591 Introduction to Software Development: Fall 2017, Fall 2016, Fall 2015
- CIT 594 Data Structures and Software Design: Spring 2017, Spring 2016
- CIS 557 Programming for the Web: Fall 2016, Spring 2015, Fall 2014
- CIS 350 Software Design and Engineering: Spring 2014

Courses taught at Columbia University

- COMS 1007 Honors Introduction to Computer Science: Spring 2013
- COMS 4156 Advanced Software Engineering: Fall 2012
- COMS 1007 Object-Oriented Programming and Design in Java: Spring 2012
- COMS 3134 Data Structures in Java: Fall 2011
- COMS 1001 Introduction to Information Science: Spring 2011

Courses TA'd at Columbia University

- COMS 1004 Introduction to Computer Science and Programming in Java: Fall 2010, Summer 2010, Summer 2009
- COMS 4156 Advanced Software Engineering: Summer 2010, Summer 2009, Fall 2008, Spring 2008, Fall 2006
- COMS 6125 Web Enhanced Information Management: Spring 2010, Spring 2009, Summer 2008, Spring 2008
- COMS 1007 Object-Oriented Programming and Design in Java: Summer 2008

Professional and Research Experience

CIS Masters Chair and CIS/MSE Program Director, Spring 2018 – present

Practice Associate Professor, Fall 2020 – present

Senior Lecturer, Fall 2017 – Summer 2020

Lecturer, Spring 2014 – Summer 2017

University of Pennsylvania, Department of Computer and Information Science, Philadelphia, PA

Taught 17 undergraduate and 15 graduate classes.

Preceptor (Graduate Student Instructor), January 2011 – May 2013

Columbia University, Department of Computer Science, New York, NY

Taught 4 undergraduate classes and 1 graduate class.

Graduate Research Assistant, January 2007 – December 2013

Columbia University, Department of Computer Science, New York, NY

Worked on a project called “Societal Computing” that explores the impact of computational trade-offs on societal concerns such as Privacy, Green Computing, Sustainability, and Cultural Differences.

Past projects include “HALO (Highly Addictive socialLly Optimized) Software Engineering” — applying engaging qualities of games to software engineering to make it more fun and social; “genSpace” — exploring knowledge sharing and recommender systems for scientific collaborative work.

Intern, June – August 2007

Intelligent Search Technologies Ltd., White Plains, NY

Implemented a Module for Transliteration in C and ported the code to Windows, Linux, Solaris, HP UX, and AIX and wrote wrappers in Ruby enabling clients who use Ruby to integrate legacy C code through Shared Objects (DLLs and .so).

Intern, January – February 2006

Atos Origin, Torino, Italy

Student Intern for the Winter Olympics 2006 at Torino, Italy; 1 out of 25 students selected worldwide for the Olympic Intern Program; Managed the Technology Help Desk at Cesana Pariol and headed a team of 20+ volunteers; Responsible for providing On-Venue support to customers such as Torino Olympic Committee, Kodak, Lenovo, and Omega.

Publications (Computer Science Education)

C. Murphy, **S. Sheth**, S. Morton. *A Two-Course Sequence of Real Projects for Real Customers*. Proc. of the 48th ACM Technical Symposium on Computing Science Education (SIGCSE), Seattle, WA, March 2017. (**SIGCSE Exemplary Paper**)

S. Sheth, C. Murphy, K. Ross, D. Shasha. *A Course on Programming and Problem Solving*. Proc. of the 47th ACM Technical Symposium on Computing Science Education (SIGCSE), Memphis, TN, March 2016.

S. Sheth, J. Bell, G. Kaiser. *A Gameful Approach to Teaching Software Design and Software Testing*. In *Computer Games and Software Engineering*, chapter 2, CRC, 2014.

S. Sheth, J. Bell, G. Kaiser. *A Competitive-Collaborative Approach for Introducing Software Engineering in a CS2 Class*. Proc. of CSEET 2013 - 26th Conference on Software Engineering Education and Training, San Francisco, California, May 2013

J. Bell, **S. Sheth**, G. Kaiser. *Secret Ninja Testing with HALO Software Engineering*. Proc. of the 4th Intl. Workshop on Social Software Engineering (SSE), Szeged, Hungary, September 2011.

Publications (Software Engineering, Privacy)

S. Sheth, W. Maalej, G. Kaiser. *Us and Them: A Study of Privacy Requirements Across North America, Asia, and Europe*. Proc. of the 2014 International Conference on Software Engineering (ICSE), Hyderabad, India, June 2014.

J. Bell, K. Cooper, G. Kaiser, **S. Sheth**. *Report from the Second International Workshop on Games and Software Engineering (GAS 2012)*. ACM SIGSOFT Software Engineering Notes, 38(2), November 2012.

S. Sheth. *Societal Computing*. Proc. of the 2012 International Conference on Software Engineering (ICSE) Doctoral Symposium, Zurich, Switzerland, June 2012.

S. Sheth, G. Kaiser. *The Tradeoffs of Societal Computing*. Proc. of Onward! 2011 - ACM Symposium on New Ideas in Programming and Reflections on Software - Essays Track, Portland, Oregon, October 2011.

S. Sheth, J. Bell, G. Kaiser. *HALO (Highly Addictive, socially Optimized) Software Engineering*. Proc. of the 1st International Workshop on Games and Software (GAS), Honolulu, Hawaii, May 2011.

S. Sheth, G. Kaiser. *Towards using Cached Data Mining for Large Scale Recommender Systems*. Proc. of the 2011 International Conference on Data Engineering and Internet Technology (DEIT 2011), Bali, Indonesia, March 2011.

S. Sheth, N. Arora, C. Murphy, G. Kaiser. *The weHelp Reference Architecture for Community-Driven Recommender Systems — Short Position Paper*. Proc. of the 2nd International Workshop on Recommendation Systems for Software Engineering (RSSE), Cape Town, South Africa, May 2010.

S. Sheth, N. Arora, C. Murphy, G. Kaiser. *weHelp: A Reference Architecture for Social Recommender Systems*. Proc. of the 3rd International Workshop on Social Software Engineering (SSE), Paderborn, Germany, February 2010.

C. Murphy, **S. Sheth**, G. Kaiser, L. Wilcox. *genSpace: Exploring Social Networking Metaphors for Knowledge Sharing and Scientific Collaborative Work*. Proc. of the 1st International Workshop on Social Software Engineering and Applications (SoSEA), L'Aquila, Italy, September 2008.

Conference and Workshop Presentations

Justin Hsia, Dan Garcia, **Swapneel Sheth**. *Student Teachers as Lead University Instructors (BoF)*. Proc. of the 52nd ACM Technical Symposium on Computer Science Education (SIGCSE), March 2021.

Heena Nagda, Rakesh Nagda, **Swapneel Sheth**, Nik Sultana, Boon Thau Loo. *FDP: A Teaching and Demonstration Platform for Networking (Demo)*. Proc. of the 52nd ACM Technical Symposium on Computer Science Education (SIGCSE), March 2021.

Male Allies (BoF). ACM Capitol Region Celebration of Women in Computing (CAPWIC), Harrisonburg, VA, March 2019.

Male Allies (Panel). ACM Capitol Region Celebration of Women in Computing (CAPWIC), Washington, DC, February 2017.

External Service

ACM Technical Symposium on Computer Science Education (SIGCSE)

Associate Program Chair 2023, 2021, 2020, 2019; Organizer 2020; Paper Reviewer 2018, 2017, 2016.

ACM/IEEE International Workshop on Software Engineering Education for the Next Generation (SEENG)

Program Committee 2023, 2022.

ACM Technical Symposium on Computer Science Education (SIGCSE)

Associate Program Chair 2023, 2021, 2020, 2019; Organizer 2020; Paper Reviewer 2018, 2017, 2016.

ACM Philadelphia Region Celebration of Women in Computing (PHICWIC)

Organizer 2018.

2nd International Workshop on Games and Software Engineering (GAS): Realizing User Engagement with Game Engineering Techniques

Organizer 2012.

Internal Service

University of Pennsylvania

Central Pool Classrooms Committee (Spring 2023 – current); Undergraduate Curriculum Committee (Fall 2022 – current; Fall 2018 – Fall 2019); Master’s Awards Committee (2021, 2018); Diversity Summit Organizing Committee (2021, 2019, 2018); ISSS Forerunner (2022, 2020, 2019); Teaching-Track Search Committee (2023 (Co-Chair), 2018, 2017)

Columbia University

TA Coordinator, Department of Computer Science — Supervised and trained undergraduate and graduate teaching assistants (Spring 2009 - Fall 2013)

Student Advising

Gabrielle Bioteau, Camryn Carter, Caleigh Dennis, Shane Duncan, Naomi Maranaga, “Plant the Code”, senior design, University of Pennsylvania, Spring 2023.

Serena Jiao, Ellie Kim, David Ahn, Erica Sun, Belinda Jin, “Feed”, senior design, University of Pennsylvania, Spring 2023.

Kevin Mathew, “An Analysis of the Impact of Algorithms on Home Appraisals”, senior thesis, University of Pennsylvania, Spring 2023.

Daniel Ng, “Foo, Bar, and ‘a Lists: Increasing Learning Outcomes in Large CS1 Settings Through Instructional Technologies”, senior thesis, University of Pennsylvania, Fall 2022.

Sebastian Nikles, “Evaluation of Existing Learning Management Systems and Suggestion for an Easier and Faster To Learn Design of a Learning Management System”, Master’s Thesis, Technische Universität München, Fall 2022.

Daniel Like, William Goeller, Stephen Lee, “Cryptocurrency Arbitrage System”, senior design, University of Pennsylvania, Spring 2022.

Nadine Wain, Partha Rao, Riya Narayan, Shrivats Kannan, Yuyang Wang, “UpNext”, senior design, University of Pennsylvania, Spring 2022.

Raymond Mason, Ashwin Nathan, Karthik Macherla, Shaya Zarkesh, “VideoChat”, senior design, University of Pennsylvania, Spring 2022.

Katherine Freeman, Mariana Luna, Madison Reynertson, Stefan Papazov, “PriceRight”, senior design, University of Pennsylvania, Spring 2022.

Kachik Ashkaryan, Adya Aggarwal, Jason Tran, Anirudh Agrawal, Hagar Elhanbly, “The Conscious Investor”, senior design (co-advised with Rakesh Vohra), University of Pennsylvania, Spring 2022.

Yu Yeon Lee, Maria Tu, Matthew Kim, Kevin Xu, “Grocer+Me”, senior design, University of Pennsylvania, Spring 2022.

Jacob Davoudgoleh, Damian DiMarco, Olivia Morrissey, Joshua Nouriyelian, “Moz[AI]rt”, senior design, University of Pennsylvania, Spring 2022.

Carol Li, Christina Lu, Damian Krupa, Grace Jiang, “Schoolyard”, senior design, University of Pennsylvania, Spring 2022.

Armaan Tobaccowalla, Jediah Katz, Peyton Walters, Yingxuan Eng, “WER”, senior design, University of Pennsylvania, Spring 2022.

Maya Patel, Brandon Barros, Anusha Sriram, Mohamed Loirraqi, Mirriam Ronoh, Vaed Khurjekar, “forklyft”, senior design (co-advised with Duncan Watts), University of Pennsylvania, Spring 2022.

Amelia Rosenbaum, Emily Gelb, Hayley Sussman, Jessica Tashman, “Hideout”, senior design, University of Pennsylvania, Spring 2022.

Akhil Chandra, Sarthak Jain, Kunal Abichandani, “Penn Coursegram”, senior design, University of Pennsylvania, Spring 2022.

Niranjan Ramamurthy, “Edge Computing”, senior thesis, University of Pennsylvania, Spring 2022.

Andrew Shen, “Interaction Patterns for Collaborative Environments”, senior thesis, University of Pennsylvania, Fall 2021.

Yuwon Moon, “Blockchain and the Future: Societal, Political, Environmental, and Ethical Impacts”, senior thesis, University of Pennsylvania, Fall 2021.

Delilah Lubarsky, Elias Kalish, Kailey Blair, “Recyclean: Live Sustainably”, senior design (co-advised with Daeyeon Lee), University of Pennsylvania, Spring 2021.

Dhruv Iyer, Amit Lohe, Liana Patel, Catherine Wang, “dormsy”, senior design, University of Pennsylvania, Spring 2021.

Daksh Chhokra, Joan Shaho, Shreyas Sonbarse, “Groupder”, senior design, University of Pennsylvania, Spring 2021.

Nick Gomez, Jonah Miller, John Goettle, Riley Cheeseman, Mackenn Bross, “Poligraph”, senior design, University of Pennsylvania, Spring 2021.

Aliza Gindi, Chaim Fishman, Jacob Glenn, Leah Voytovich, Pedro Sacramento, “MERT Internal Application”, senior design (co-advised with Clayton Greenberg), University of Pennsylvania, Spring 2021.

Allison Smith, Caroline Murphy, Chloe Prezelski, Zulfiqar Soomro, “WIGO: A transportation schedule sharing mobile application”, senior design, University of Pennsylvania, Spring 2021.

Karman Cheema, Surya Dhir, Ben Huang, Anushrut Shah, Anshul Tripathi, “ExpertEase”, senior design, University of Pennsylvania, Spring 2021.

Zhixin Zhang, Frankie Wang, Jeffrey Liu, Kevin Agolli, “Huddle – The Interactive Presentation Platform”, senior design, University of Pennsylvania, Spring 2021.

Varun Jana, Umang Somani, Rajvi Gemawat, Vatsal Jain, “Bridge to Dream”, senior design (co-advised with Zack Ives), University of Pennsylvania, Spring 2021.

Jacqueline Lou, “On pushing computing toward a greener future”, senior thesis, University of Pennsylvania, Spring 2021.

Selina Nie, “Words on Screens: Global Typography in the Digital Age”, senior thesis, University of Pennsylvania, Spring 2021.

Sheila Gaur, “Smart Contracts: Security, Vulnerabilities, and Enhancements”, senior thesis, University of Pennsylvania, Spring 2021.

Ahmed Lone, Varun Ramakrishnan, “An Exploration of Macroeconomic and Alternative Data Signals for Implied Volatility in Cryptocurrency Options”, senior thesis, University of Pennsylvania, Fall 2020.

Kongkrit (Gund) Jungsanguanpornasuk, “Blockchain and Financial Technology”, senior thesis, University of Pennsylvania, Fall 2020.

Tangirala Satya Prafful, “Building an Environmentally Sustainable Future Through Machine Learning”, senior thesis, University of Pennsylvania, Fall 2020.

Sam Akhavan, Hana Pearlman, Weizhen Sheng, Jane Xu, “Remora: Transferring Resource-Intensive Computational Tasks between Personal Devices in Real Time”, senior design, University of Pennsylvania, Spring 2020.

Caroline Okun, “Understanding Your Online Footprint”, senior thesis, University of Pennsylvania, Spring 2020.

Angel Fan, “The Growth of Financial Technology and Its Impact on Financial Inclusion”, senior thesis, University of Pennsylvania, Spring 2020.

Carlos Bros Gallego, “Data Privacy, Privacy-Preserving Techniques and the Success of Differential Privacy”, senior thesis, University of Pennsylvania, Fall 2019.

Hana Yen, “Information and Communication Technology for Sustainability: Cloud Computing as Part of the Direct and Indirect Solution”, senior thesis, University of Pennsylvania, Fall 2019.

Shivansh Inamdar, “Data Privacy in Tech”, senior thesis, University of Pennsylvania, Fall 2019.

Sunia Bukhari, “Recommender Systems and Personalization”, senior thesis, University of Pennsylvania, Fall 2019.

Trevor Morcott, “Applied Graph Rankings for Baseball Game Prediction”, senior thesis, University of Pennsylvania, Spring 2019.

David Buckman, Hunter Lightman, Kyle Rosenbluth, Emmanuel Suarez, “See Sharper: Augmented Reality Tool for Seeing Through Walls”, senior design, University of Pennsylvania, Spring 2019.

Anastasia Efremkina, Stella Ge, Mara Levy, Gabriella Schwartz, “PiazzaStat: An NLP Tool for Course Improvement”, senior design, University of Pennsylvania, Spring 2019.

Dorothy Chang, Samantha Chung, Talia Statsky-Frank, Andre Wallace, “PennCourseRecs: A Penn Course Recommendation System”, senior design, University of Pennsylvania, Spring 2019.

Solomon Goldfarb, Ryan Paul, Elan Sharony, Jacob Snyder, “s.Data.ium: A Data-Driven Analysis of Home Field Advantage”, senior design, University of Pennsylvania, Spring 2019.

Patrick Andrade, Lawrence Choi, Ryan O’Gorman, and Don Yu, “Hotpot”, senior design, University of Pennsylvania, Spring 2018.

Dhruv Agarwal, Rohan Bhide, Shaurya Dogra, and Archit Sharma, “VoteBloc”, senior design, University of Pennsylvania, Spring 2018.

Andrea Baric and Parker Stakoff, “ConnectED”, senior design, University of Pennsylvania, Spring 2018.

Danielle Frost, Brendan Mahoney, and Lauren Silberberg, “Bookworm”, senior design, University of Pennsylvania, Spring 2017.

Mikaela Gilbert, JP Quinn, and Matt Raimo, “SmartSpace”, senior design, University of Pennsylvania, Spring 2017.

Robert Frias and Alex Peckman, “Shark”, senior design, University of Pennsylvania, Spring 2017.

Reuben Abraham, Jonathan Cho, Kieraj Mumick, and Igor Pogorelskiy, “Sprout”, senior design, University of Pennsylvania, Spring 2017.

Eric Kwong, Chris Besser, Nick Wein, and Greg Dikopf, “Git Strategy”, senior design, University of Pennsylvania, Spring 2017.

John Earle, “Social Shopping Platform”, senior design, University of Pennsylvania, Spring 2016.

Deeptanshu Kapur, “Effective Education Methodologies for Introductory Computer Science Courses at the University of Pennsylvania”, senior thesis, University of Pennsylvania, Spring 2016.

Aashish Lalani and Varun Agarwal, “P.D.A.T. (Piazza Data Analysis Tool)”, senior design, University of Pennsylvania, Spring 2016.

Adam Baitech, “Exploring the Implications of Artificial Intelligence and Algorithmic Trading in Financial Markets and Investing”, senior thesis, University of Pennsylvania, Spring 2015.

Rohan Bopardikar, “Bluetooth Low Energy: A Technological Overview and Applications Analysis”, senior thesis, University of Pennsylvania, Spring 2015.

Yuhang Guo, “The Online Anonymity Debate and Preservation Techniques”, senior thesis, University of Pennsylvania, Fall 2014.

Kunal Ghogale, “User Survey on Importance of Privacy in Software Engineering”, graduate research, Columbia University, Fall 2012.

Priyank Singhal, “Privacy Settings in Recommender Systems”, graduate research, Columbia University, Fall 2012.

Morris Hopkins and Ami Kumar, “Software Testing for Privacy”, undergraduate research, Columbia University, Fall 2012.

Muzi Gao, “Privacy Requirements in Software Engineering”, graduate research, Columbia University, Spring 2012 - Fall 2012.

Lakshya Bhagat, Zhou Ma, and Shuaishuai Nie, “Survey on Recommender Systems and Privacy”, graduate research, Columbia University, Spring 2012.

Mohan Kolli, “Facebook and Privacy”, graduate research, Columbia University, Fall 2011.

Flavio Palandri Antonelli, “Enhancing Workflow Modeling and Management in genSpace”, graduate research, Columbia University, Summer - Fall 2010.

Eliane Kabkab, “Usability Study of genSpace”, graduate research, Columbia University, Spring 2010 - Fall 2010.

Danielle Cauthen, “Enhancing the Web Portal for genSpace”, independent graduate study, Columbia University, Fall 2010.

Scott Rogowski, “Statistical Analysis of Conference Papers”, undergraduate research, Columbia University, Fall 2010.

Yuan Wang and Eric Schmidt, “Cache Evaluation of genSpace”, graduate research, Columbia University, Fall 2009.

Palak Baid and Jau Yuan Chen, “Cloudview: Using peers to debug and diagnose application faults”, graduate research, Columbia University, Spring 2009 - Fall 2009.

Jonathan Bell, “Enhancing collaborative work in genSpace”, undergraduate research, Columbia University, Fall 2009 - Spring 2010.

Joshua Nankin, Anureet Dhillon, Gaurav Pander, Koichiro Matsunaga, Gowri Kanugovi, Hyuksoo Seo, Lakshmi Nadig, and Mayur Lodha, “Data Mining, User Experience, and Security in genSpace”, graduate research, Columbia University, Fall 2008.

Cheng Niu, “Real-time Recommendations in genSpace”, graduate research, Columbia University, Summer 2008 - Fall 2008.