Wade Fagen-Ulmschneider

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Education

» Ph.D. » Computer Science   2013
University of Illinois Urbana-Champaign (UIUC)
- Thesis Advisor: Sam Kamin; Committee: Klara Nahrstedt, Karrie Karahalios, and Mark Guzdial

» M.S. with Thesis » Computer Science, Intelligent Systems Track   2006
» B.S. with Summa Cum Laude Honors » Software Engineering   2005
University of Texas at Dallas (UT-Dallas)
- Thesis Advisor: João Cangussu

Employment

» University of Illinois Urbana-Champaign, School of Computing and Data Science   2013 -

2023-	**Teaching Professor, Computer Science (Grainger College of Engineering)** Affiliate Appointments: Discovery Partners Institute (DPI); Carle Illinois College of Medicine; Game Studies and Design (School of Information Sciences); and Department of Statistics (College of Liberal Arts and Sciences) Faculty Fellow, Center for Innovation in Teaching and Learning
2019-2023	Teaching Associate Professor, Computer Science
2016-2019	Teaching Assistant Professor, Computer Science
2013-2016	Lecturer, Computer Science

» Morgan Stanley; New York City, NY   2010 - 2011
Associate, Fixed Income Strategist of Commercial Mortgage-Backed Securities (CMBS)

» Google, Inc.   Summer 2009
Pidgin Open Source Project

» Cisco Systems; Richardson, TX   Summer 2008
Software Developer

Notable Accomplishments

» Nationally-recognized Interactive Data Visualizations   Ongoing
Multiple governors used visualizations at state-wide press conferences (Washington Gov. Jay Inslee and Kentucky Gov. Andy Beshear), featured on CBS "This Morning", Washing Post, Popular Mechanics, Vox, Gizmodo, and more; >100k max daily users and >1b interactions across all published visualizations.

» Provost's Award for Excellence in Undergraduate Teaching   2020

» Invited Guest: National Academy of Engineering's Frontiers of Engineering Education   2016
"The Frontiers of Engineering Education (FOEE) Symposium brings together some of the nation's most engaged and innovative engineering educators in order to recognize, reward, and promote effective, substantive, and inspirational engineering education." – National Academy of Engineering

— Impact —

My impact has been both in the public discourse (data visualizations, widely-adopted tools, and invited talks) as well as in academic endeavors (conferences, journals, and other peer-reviewed work). In my role at the University of Illinois, an emphasis is placed on providing education to undergraduate students and an (*) denotes an undergraduate co-author.

Data Visualizations

» **"Daily Weather Waves of Daily High Temperatures"** and **"Daily Weather Waves of Daily High Temperatures"** (2022); Katy Miles*, W. Fagen-Ulmschneider, Angie Cheng*, and Karle Flanagan.

"Temperature Radials" (2022); Katy Miles*, W. Fagen-Ulmschneider, Angie Cheng*, and Karle Flanagan.

» **"Historic Snowfall and Snow Depth"** (2022); W. Fagen-Ulmschneider, Angie Cheng*, Katy Miles*, Karle Flanagan, and Emily Crawford*.

» **The 91-DIVOC Project featuring visualizations of COVID-19** (2020-2003); W. Fagen-Ulmschneider. Seven distinct visualizations, 1b+ interactions, 10m+ unique visitors, and 100k+ daily users; used by governors of multiple states and featured in reporting by CBS This Morning, Washington Post, Popular Mechanics, Vox, The Verge, SLATE, Gizmodo, and other national media. Updated multiple times daily.

      91-DIVOC-01: **"An interactive visualization of the exponential spread of COVID-19"**
      91-DIVOC-02: **"COVID-19 Data for Locations of People You Love"**
      91-DIVOC-03: **"Coronavirus Visualized as a 1,000-Person Community"**
      91-DIVOC-04: **"Coronavirus Contribution by State"**
      91-DIVOC-05: **"Interactive Visualization of COVID-19 in Illinois"**
      91-DIVOC-06: **"COVID-19 at Big Ten Conference Schools"**
      91-DIVOC-07: **"Coronavirus Contribution by Country"**

» **"The Grainger Engineering Metro Map"** (2020); senior thesis of Tamara Nelson-Fromm*; advised by W. Fagen-Ulmschneider. Awarded best presentation at Illinois' undergraduate research symposium.

» **"Gender Diversity of Course Instructors at Illinois"** (2019); Tamara Nelson-Fromm*, Grace Cao*, Suhritha Raj*, and W Fagen-Ulmschneider.

» **"Pokemon Egg Move Calculator"** (2019); A. Buyevich*, E. Chen, A. Sundararajan, W. Fagen-Ulmschneider.

» **"Perception of Probability Words"** (2019); W. Fagen-Ulmschneider.

» **"Racial Demographics at UIUC"** (2017); D. Oliver*, W. Fagen-Ulmschneider, T. Abraham*, and K. Landolt*. Awarded first prize in the University of Illinois' 2018 Data Visualization Contest.

» **"Grade disparity between sections at UIUC"** (2017); D. Oliver*, J. Guo*, J. Tan*, J. Li*, T. Abraham*, A. T. Mao*, K. Landolt*, N. Cho*, and W. Fagen-Ulmschneider.

» **"GPAs of Every Course at The University of Illinois"** (2016); J. Lee*, N. Claussen*, W. Fagen-Ulmschneider, and Cinda Heeren.

» **"Every Gen Ed at UIUC, by GPA"** (2016); K. Fei*, C. Breckenfelder*, and W. Fagen-Ulmschneider. Awarded "Best Original Content of 2016" at The University of Illinois.

» **"Illini Nation through 120+ Years of Illini Football"** (2016); A. Simon*, N. Ng*, and W. Fagen-Ulmschneider.

» **"120 Years of Illini Football, By Coach"** (2016); N. Ralston*, J. Pellettiere* and, W. Fagen-Ulmschneider.

» **"Class Hierarchy At University of Illinois Urbana-Champaign"** (2016); senior thesis of A. Mori*; advised by W. Fagen-Ulmschneider and C. Heeren.

Widely Used/Widely Adopted Tools

» **Mastery Platform** (2023-); Wade Fagen-Ulmschneider et al. Mastery-based assessment and exams for large-enrollment University courses.

» **Data Science Clicker** (2023-); Wade Fagen-Ulmschneider et al. Web-based student response platform for large-enrollment University lectures.

» **Canvas External Grade Import Tool** (2021-); Wade Fagen-Ulmschneider and Karle Flanagan. A tool to streamline importing grades from external assessments into Canvas.

» **Illinois' LinkedIn Banner Image Generator** (2019-)**;** Ashley Grudzinski*, Karle Flanagan and Wade Fagen-Ulmschneider. Generates Illinois-themed, professional banners for use on LinkedIn; 2,000+ banners generated to date, including in use by the chief marketing officer at Illinois.

» **The Illinois Open Source Queue** (2017-); many contributors on github.com/illinois/queue. Online queue to facilitate office hours, used by 8,000+ students /semester across 50+ courses, advising offices, and student groups at The University of Illinois.

» **u/uiuc-bot on reddit** (2019-2021); Rose Nowak* and Wade Fagen-Ulmschneider. A reddit bot designed for r/uiuc, one of the largest college-based reddit communities, that helps with course schedules and GPAs.

» **GitHub Repository Creator** (2018-); Wade Fagen-Ulmschneider. A microservice that allows students to create a GitHub repository in a course organization; used by 10,000+ students from 10+ courses.

Selection of Notable Adoption and Media Coverage

» CBS This Morning (Manuel Bojorquez, 2020); Bojorquez's (National Correspondent, CBS) segment on the coronavirus includes a video interview with Fagen-Ulmschneider regarding COVID-19 data.

» Washington State Governor Jay Inslee (2020); used 91-DIVOC as part of Washington's COVID-19 press conferences on March 26; Gov. Inslee's office also tweeted about the visualization later that day.

» Kentucky State Governor Andy Beshear (2020); used 91-DIVOC as part of many of Kentucky's COVID-19 press conferences in April, June, July and August.

» Washington Post (Paige Winfield Cunningham, 2020); "The Health 202: Most states lifting coronavirus lockdowns haven't met federal guidelines for reopening" used Fagen-Ulmschneider's 91-DIVOC visualization as part of a piece on COVID-19.

» SLATE (Ben Mathis-Lilley, 2020); "Texas and Florida, Please Put Masks On or We'll Never Get Out of This" used Fagen-Ulmschneider's 91-DIVOC visualization as part of a piece on COVID-19.

» Popular Mechanics (Esther Landhuis, 2020); "These Data Science Wizards Tell Us What's Really Happening With Coronavirus" quoted Fagen-Ulmschneider; covers 91-DIVOC as "the easiest way to make sense of essential data".

» Forbes (Marshall Shepherd), July 17, 2020; "Scientists Have Been Right About The Coronavirus. Why Are People Still Not Listening?" used Fagen-Ulmschneider's 91-DIVOC visualization as part of an article on COVID-19.

» Vox (Joss Fong, et al, 2020); Video: "How coronavirus charts can mislead us" cited Fagen-Ulmschneider's 91-DIVOC project as a COVID-19 resource.

» The Verge (Adi Robertson, 2020); "The Best Graphs and Data for Tracking the Coronavirus Pandemic" listed Fagen-Ulmschneider's 91-DIVOC as one of the five "most helpful public resources" for tracking COVID-19.

» USA Today (John Bacon, Elinor Aspegren, and Lorenzo Reyes, 2020); "Coronavirus updates: LA and San Diego school districts will start fall classes online only; California orders statewide closures" cited Fagen-Ulmschneider's 91-DIVOC project as a COVID-19 resource.

» **University of Illinois** (Prof. Sergei Maslov, 2020); "COVID-19 Briefing Series: Data Modeling" used Fagen-Ulmschneider's 91-DIVOC visualization as part of a video briefing on COVID-19 for the University of Illinois campus.

» **Gizmodo** (Beth Skwarecki, 2020); "Esta gráfica con los casos de covid-19 por países es buena para tu información, pero no para tu ansiedad" wrote about Fagen-Ulmschneider's 91-DIVOC visualization for a Spanish-language audience.

(See https://waf.cs.illinois.edu/impact/ for additional citations of adoption and media coverage.)

Academic Publications

Conference Proceedings and Journal Publications

» **"Work In Progress: A Metro Map-Based Curriculum Visualization for Examining Interrelated Curricula"**; Tamara Nelson-Fromm and Wade Fagen-Ulmschneider; 2022 American Society for Engineering Education Annual Conference & Exposition (ASEE 2022).

» **"Work in Progress: Analysis of the Impact of Office Hours on Graded Course Assessments"**; Natalia Ozymko*, Matthew McCarthy*, *Wade Fagen-Ulmschneider*, Karin Jensen, and Karle Flanagan; 127th American Society for Engineering Education Annual Conference & Exposition (ASEE 2020). https://doi.org/10.18260/1-2--33960.

» **"Measuring Impact: Student and Instructor Experience Using an Online Queue"**; David Mussulman, Karin Jensen, Jennifer R. Amos, Lawrence Angrave, Karle Flanagan, Wade Fagen-Ulmschneider, Natalia Ozymko*, Rittika Adhikari*, and Jacqueline Osborn*; 127th American Society for Engineering Education Annual Conference & Exposition (ASEE 2020). https://doi.org/10.18260/1-2--34961.

» **"Introducing junto: a Web Tool to Build Project Teams based on a Bidding Strategy"**; Akhil Mohan*, Priyanka Dey*, Sizhi Tan*, Blake Johnson, Wade Fagen-Ulmschneider, and Mariana Silva; 127th American Society for Engineering Education Annual Conference & Exposition (ASEE 2020). https://doi.org/10.18260/1-2--34876.

» **"Adoption of an online queue app for higher education: a case study"**; K. Jensen, J. Amos, L. Angrave, W. Fagen-Ulmschneider, K. Flanagan, D. Mussulman, and C. Schmitz; 126th American Society for Engineering Education Annual Conference & Exposition (ASEE 2019). https://doi.org/10.18260/1-2--32042.

» **"Re-engineering an "Introduction to Computing" course within a College-Wide Community of Practice"**; W. Fagen, C. Heeren, G. Herman, M. West; 122nd American Society for Engineering Education Annual Conference & Exposition (ASEE 2015).

» **"Quantitative Correlation between Student Use of Office Hours and Course Performance"**; C. Heeren, W. Fagen; 122nd American Society for Engineering Education Annual Conference & Exposition (ASEE 2015).

» **"Computerized Testing: A Vision and Initial Experiences"**; C. Zilles, R.T. Deloatch, J. Bailey, B. Khattar*, W. Fagen, C. Heeren, D. Mussulman, and M. West; 122nd American Society for Engineering Education Annual Conference & Exposition (ASEE 2015).

» **"Measuring increased engagement using Tablet PCs in a code review class"**; W. Fagen, S. Kamin; Proceeding of the 44th ACM technical symposium on Computer Science Education (SIGCSE 2013).

» **"A Cross-Platform Framework for Educational Application Development on Phones, Tablets, and Tablet PCs"**; W. Fagen, S. Kamin; Proc. of the 2012 Intl. Conf. on Frontiers in Education: Computer Science and Computer Engineering (FECS 2012).

» "Developing Device-independent Applications for Active and Collaborative Learning with the SLICE Framework"; W. Fagen, S. Kamin; Proc. of the 2012 World Conf. on Educational Multimedia, Hypermedia and Telecommunications (EdMedia 2012).

» "Supporting active learning in large classrooms using pen-enabled computers"; S. Kamin, W. Fagen; Proc. of the 2012 Intl. Conf. on Frontiers in Education: Computer Science and Computer Engineering (FECS 2012).

» "A virtual environment for network testing"; W. Fagen, J. Cangussu, R. Dantu; Journal of Network and Computer Applications (JNCA Volume 32, Issue 1, Jan. 2009).

» "Goliath: A Configurable Approach for Network Testing"; W. Fagen, J. Cangussu, R. Dantu; 3rd International Conference on Testbeds and Research Infrastructure for the Development of Networks and Communities, 2007 (TridentCom 2007).

Invited Academic Talks, Seminars, Posters, and Technical Reports

» Playful by Design Symposium (2021), "Nerding out in Large Classes with Interactive Games", with Karle Flanagan.

» CHANCE Program (2021) at The University of Illinois Chicago (UIC), "Storytelling and Data Visualization" with Karle Flanagan.

» National Workshop on Data Science Education at University of California Berkeley (2021), Panelist with Gloria Washington (Howard University), Solomon Russell (El Camino College), and Karle Flanagan (University of Illinois).

» University of Texas at Dallas (2020), "Data Visualization and 91-DIVOC".

» University of Illinois Urbana-Champaign, Provost's Annual Faculty Retreat (2020), "The Emotion of Discovery" with Karle Flanagan and "The Emotion of Competition & Winning" with Karle Flanagan.

» University of Illinois Urbana-Champaign, Department of Statistics (2019), "Data Visualization, Storytelling, and Data Science at The University of Illinois".

» Carleton College (2016), "Beyond PowerPoint: Mobile-first, Dynamic, Trackable Presentations in HTML5".

» Swarthmore College (2016), "Beyond PowerPoint: Mobile-first, Dynamic, Trackable Presentations in HTML5".

» "Beyond PowerPoint: Mobile-first, Dynamic, Trackable Presentations in HTML5" (Workshop Talk); W. Fagen; Illinois Learning Sciences Design Laboratory (ILSDL 2015).

» "Enabling Students through a Modern, Computing-Centric Education" (Workshop Poster); W. Fagen, C. Heeren; ; Illinois Learning Sciences Design Laboratory (ILSDL 2015).

» "Quantitative Correlation between Student Use of Office Hours and Course Performance" (Workshop Poster); C. Heeren, W. Fagen; Illinois Learning Sciences Design Laboratory (ILSDL 2015).

» "Tablet PCs in a code review class"; S. Kamin, W. Fagen; 2013 Workshop on the Impact of Pen & Touch Technology on Education (WIPTTE 2013).

» "A framework developing cross-platform pen-based classroom applications with an automated measure of vocal participation" (Ph.D. Dissertation); W. Fagen; 2013.

» "Exploring a New World of Identity with Identity 2.0 based Solutions" (Technical Report); W. Fagen, K. Karahalios; Department of Computer Science, Report No. 2855, University of Illinois Urbana-Champaign; 2007.

» **"Goliath: A Configurable Approach for Network Testing"** (Master's Thesis); <u>W. Fagen</u>; 2006.

(See section "Service: Community Engagement" for additional talks given outside of academia.)

— Education —

New Course Development

» **CS 340: Introduction to Computer Systems**
New CS core course offering to replace computer architecture (CS 233) and systems programming (CS 241) for CS+X students with areas of specialization where understanding cloud computing resources is critical.

» **CS/STAT/IS 107: Data Science Discovery**
First campus-wide introduction to data science general education course; serves as the entry-point to the Data Science majors, minors, and certificates. Developed and piloted with Karle Flanagan in Spring 2019; currently offered every semester with nearly 2,000 students /year enrollment.

» **Coursera MOOC: Accelerated CS Fundamental Specialization**
A sequence of three month-long Coursera MOOCs built as a specialization: "Object-Oriented Data Structures in C++", "Ordered Data Structures", and "Unordered Data Structures". Provides a technical on-ramp for students applying to the online MCS program. 45,000+ enrolled students.

» **CS 205/305: Data Driven Discovery**
A data-driven analysis and visualization course, developed and piloted with Cinda Heeren in 2015. Provides non-majors opportunities to explore technical data visualization and data science.

Instruction

Course ratings are collected via Coursera (MOOC courses) or the Center for Innovation in Teaching and Learning (CITL) at The University of Illinois (on-campus courses). A star (★) denotes receiving campus recognition as a "Teacher Ranked as Excellent by Their Students" while an (N/A) denotes a course where no evaluation was done (see footnotes).

Semester	Course	Students	Rating
MOOCs (2019-Present)	Coursera Specialization: Accelerated CS Fundamental Specialization	47,542	4.7 /5.0
	Coursera: Object-Oriented Data Structures in C++ Standalone MOOC of first third of the Accelerated CS Fundamental Specialization	110,903	4.7 /5.0
	Coursera: Ordered Data Structures Standalone MOOC of second third of the Accelerated CS Fundamental Specialization	32,450	4.8 /5.0
	Coursera: Unordered Data Structures Standalone MOOC of final third of the Accelerated CS Fundamental Specialization	19,017	4.7 /5.0
Spring 2025	STAT/CS/IS 107: Data Science Discovery Co-Instructor: Karle Flanagan	840	[TBA]
Fall 2024	STAT/CS/IS 107: Data Science Discovery Co-Instructor: Karle Flanagan	1,076	★ 4.83
Spring 2024	STAT/CS/IS 107: Data Science Discovery Co-Instructor: Karle Flanagan	600	★ 4.72
Fall 2023	STAT/CS/IS 107: Data Science Discovery Co-Instructor: Karle Flanagan	1,079	★ 4.83
Spring 2023	STAT/CS/IS 107: Data Science Discovery Co-Instructor: Karle Flanagan	360	★ 4.83
	CS 340: Introduction to Computer Systems	189	★ 4.78
Fall 2022	STAT/CS/IS 107: Data Science Discovery Co-Instructor: Karle Flanagan	600	★ 4.83

	CS 340: Introduction to Computer Systems	123	★ 4.75
Spring 2022	STAT/CS/IS 107: Data Science Discovery Co-Instructor: Karle Flanagan	245	★ 4.57
	CS 240: Introduction to Computer Systems	127	★ 4.75
Fall 2021	STAT/CS/IS 107: Data Science Discovery Co-Instructor: Karle Flanagan	314	4.39
	CS 240: Introduction to Computer Systems	58	4.64
Spring 2021	CS 423: Operating Systems	94	4.36
	CS 240: Introduction to Computer Systems	50	4.77
	Introduction to Programming (Illinois International's KAUST Scholars)	17	N/A[1]
Fall 2020	CS 240: Introduction to Computer Systems (New Course Development)	11	5.00
Spring 2020	STAT/CS/IS 107: Data Science Discovery Co-Instructors: Karle Flanagan and Ha Nuygen	100	★ 4.82
	Introduction to Programming (Illinois International's KAUST Scholars)	14	N/A[1]
Fall 2019	STAT/CS/IS 107: Data Science Discovery Co-Instructor: Karle Flanagan	185	★ 4.60
Summer 2019	Data Science Creativity (Illinois International Summer Program) Co-Instructor: Karle Flanagan	30	N/A[1]
	Data Science Sprint (Illinois International Summer Program) Co-Instructor: Karle Flanagan	85	N/A[1]
Spring 2019	STAT/CS/IS 107: Data Science Discovery (New Course Development) Pilot Section, Co-Instructor: Karle Flanagan	18	★ 4.5
	CS 225: Data Structures Co-Instructor: Craig Zilles	535	N/A[2]
	CS 296-25: Honors in Data Structures	100	★ 4.5
Fall 2018	CS 225: Data Structures Co-Instructor: Mattox Beckman	795	★★ 4.9
Spring 2018	CS 225: Data Structures Co-Instructor: Eric Shaffer	775	★ 4.9
Fall 2017	CS 225: Data Structures Co-Instructor: Mattox Beckman	800	★ 4.8
Spring 2017	CS 225: Data Structures Co-Instructor: Cinda Heeren	777	N/A[2]
	CS 296-25: Honors in Data Structures	40	4.5
	CS 305: Data Driven Discovery	11	★★ 4.9
Fall 2016	CS 305: Data Driven Discovery Co-Instructor: Cinda Heeren	17	★ 4.7
Spring 2016	CS 305: Data Driven Discovery Co-Instructor: Cinda Heeren	33	★ 4.6
Fall 2015	CS 105: Introduction to Computing (non-technical majors) Co-Instructor: Martin Hellwig	998	4.4
	CS 305: Data Driven Discovery (New Course Development) Co-Instructor: Cinda Heeren	19	N/A[2]
Spring 2015	CS 105: Introduction to Computing (non-technical majors)	499	4.1
Fall 2014	CS 105: Introduction to Computing (non-technical majors)	912	4.2
Spring 2014	CS 105: Introduction to Computing (non-technical majors)	476	3.7
Fall 2013	CS 241: System Programming	205	★ 4.7

[1]: Part of a non-degree program and no student evaluations data was provided to the instructors.

[2]: Team-taught course where Fagen-Ulmschneider did not serve as the primary instructor and was not evaluated by students.

Mentorship

Senior Thesis

» **Katy Miles** (2022), "Visualizing Temperature Data on Local to National Scales", co-advised with Karle Flanagan.

» **Angie Cheng** (2022), "Software Infrastructure Supporting Large Scale Daily Weather Analysis".

» **Ashley Grudzinski** (2021), "An Illinois-Themed LinkedIn Banner Generator", co-advised with Karle Flanagan.

» **Natalia Ozymko** (2021), "An LSTM-Based Algorithm for Generating Music".

» **Tamara Nelson-Fromm** (2020), "Visualizing Curriculum Commonalities and Prerequisite Chains Through Metro Maps".

» **Alec Mori** (2016), "Class Hierarchy At University of Illinois Urbana-Champaign", co-advised with Cinda Heeren.

Independent Plan of Study (IPS)

At the University of Illinois, students can create an original major characterized by an interdisciplinary approach through independent plans of study in consultation with two or more faculty from two or more departments.

» **Tim Krock** (2017), BS-LAS in Computational Economics, co-advised with Cinda Heeren.

Independent Study, Team Projects, and Undergraduate Course Assistants (CAs)

I interacted with each student on (at least) a weekly basis as they conducted research, worked on development projects, or assisted in teaching.

» **Spring 2025:** Lauren Hyde, Michelle Ru, Louisa Zhang, Sara Lin, Jeff Zou, Talia Duffy, Mia Paelmo, Jessica Santhanam, Alyssa Anastasi, Eliana Eng, Ram Goenka, Soph Beauban, Areeba Rashid, Amaan Khan, Urvi Chaubal, Sophia Bustos, Lara Terpetschnig, Qiran Hu, Sri Nithya Yeragorla, Sangjun Ko, Lauren Barjami, Sneha Sundar, Subbu Muthiah, Bella Brunke, Anchal Ankola, Renee Huang, Emma Kassem, Gabriel "Gabe" Wolter, Ethan Nguyen, Lyndsey Bajgrowicz, Prisha Singh, Amelie Carmine, Eric Ho, Madelyn "Maddy" McNamara, Emma Darbro, Irene Konstantinidus, Kate Gudeth, Jonah Miller, Angus Chen, Claire Bartels, Caroline Siebert, Aidan Letzel, Andrijana Nikolic, Sarah Masud, Yash Hathi, and Jonathan "Jonny" Rice.

» **Fall 2024:** Lauren Hyde, Michelle Ru, Louisa Zhang, Ben Chang, Sara Lin, Jeff Zou, Talia Duffy, Mia Paelmo, Jessica Santhanam, Alyssa Anastasi, Eliana Eng, Jai Rajpal, Ram Goenka, Soph Beauban, Anagha Tiwari, Areeba Rashid, Amaan Khan, Urvi Chaubal, Paige Walk, Sophia Bustos, Lara Terpetschnig, Qiran Hu, Sri Nithya Yeragorla, Sangjun Ko, Victoria Cichowski, Lauren Barjami, Sneha Sundar, Annie Gu, Subbu Muthiah, Gerald Osterhaus, Bella Brunke, Anchal Ankola, Renee Huang, Emma Kassem, Gabe Wolter, Ethan Nguyen, Lyndsey Bajgrowicz, Prisha Singh, Zoe Hanson, Amelie Carmine, Eric Ho, Elise Feuerborn, Madelyn McNamara, Emma Darbro, and Irene Konstantinidus.

» **Spring 2024:** Megan Ja, Emily Ho, Jackson Kennel, Garrett Credi, Lauren Hyde, Michelle Ru, Kaitlyn Chan, Talia Duffy, Sony Jain, Mia Paelmo, Jessica Santhanam, Alyssa Anastasi, Eliana Eng, Evan Chen, Vikram Chandramouli, Jake Hunnius, Eeshan Garr, Xin Liu, Jai Rajpal, Ram Goenka, Shannon Dwyer, Soph Beauban, Jackson Clark, Anagha Tiwari, Areeba Rashid, Amaan Khan, Sophia Bonansinga, Urvi Chaubal, Paige Walk, Sophia Bustos, Lara Terpetschnig, Haiyue (Helen) Wu, Anchal Ankola, Tyler Hecht, Qiran Hu, Subin Pradeep, Yuheng (Jackie) Guo, Sri Nithya Yeragorla, Sangjun Ko, Victoria Cichowski, , Lauren Barjami, Anushree Raol, Sneha Sundar, Annie Gu, Subbu Muthiah, Gerald Osterhaus, and Bella Brunke.

» **Fall 2023:** Megan Ja, Emily Ho, Jackson Kennel, Garrett Credi, Lauren Hyde, Kaitlyn Chan, Talia Duffy, Sony Jain, Mia Paelmo, Jessica Santhanam, Alyssa Anastasi, Eliana Eng, Evan Chen, Vikram Chandramouli, Ana Bunas, Jake Hunnius, Eeshan Garr, Xin Liu, Jai Rajpal, Ram Goenka, Shannon Dwyer, Soph Beauban, Angela Jing, Jackson Clark, Anagha Tiwari, Areeba Rashid, Amaan Khan, Raghav Dinesh, Irene Konstantinidis, Sophia Bonansinga, Sankirtana Ravichandran, Urvi Chaubal, Paige Walk, Sophia Bustos,

Aishwarya Pasham, Lara Terpetschnig, Francesca Dumitrescu, Helen Wu, Anchal Ankola, Tyler Hecht, Qiran Hu, Subin Pradeep, Yuheng Guo, Sri Yeragorla, Sangjun Ko, Salar Cheema, Victoria Cichowski, and Anushree Raol

» Spring 2023: Jackson Kennel, Aarya Bhatia, Garrett Credi, Maaheen Maajed, Samyak Jain, Xinze (William) Zheng, Kaitlyn Chan, Talia Duffy, Sony Jain, Mia Paelmo, Linh Pham, Jessica Santhanam, Emily Crawford, Alyssa Anastasi, Eliana Eng, Evan Chen, Vikram Chandramouli, Ana Bunas, Jake Hunnius, Eeshan Garr, Xin Liu, Jai Rajpal, Ram Goenka, Shannon Dwyer, Soph Beauban, Angela Jing, Neil Teje, Jackson Clark, and Anagha Tiwari.

» Fall 2022: Jackson Kennel, Jeremy Shaffar, Sana Madhavan, Aarya Bhatia, Effie Karas, Yehjee Kim, Kaitlyn Chan, Talia Duffy, Sony Jain, Mia Paelmo, Abhi Thanvi, Linh Pham, Jessica Santhanam, Dhiraj Kuttichirayil, Leon Wang, Emily Crawford, Alyssa Anastasi, Eliana Eng, Amal Khatib, Khatija Syeda, Shriya Srikanth, Evan Chen, Vikram Chandramouli, Ana Bunas, Jake Hunnius, Eeshan Garr, Xin Liu, Jai Rajpal, Jerry Liu, Ram Goenka, Nicholas Wong, and Srikanth Shriya.

» Spring 2022: Katy Miles, Angie Cheng, Bora Shim, Jeremy Shaffar, Jesse Gong, Yehjee Kim, Tanvi Chadha, Clare Oehler-O'Sullivan, Michelle Jun, Charlie Tang, Leon Wang, Justin Kim, Kaitlyn Chan, Talia Duffy, Sonam Jain, Shannon Dwyer, Mia Paelmo, Abhi Thanvi, Linh Pham, Jessica Santhanam, and Dhiraj Kuttichirayil

» Fall 2021: Angie Cheng, Bora Shim, Jeremy Shaffar, Tamun Hanjra, Katy Miles, Jesse Gong, Yehjee Kim, Tanvi Chadha, Clare Oehler-O'Sullivan, Michelle Jun, Charlie Tang, Leon Wang, Ananya Kulkarni, and Justin Kim.

» Spring 2021 (COVID-19): Angie Cheng, Natalia Ozymko, Ashley Grudzinski and Bora Shim.

» Fall 2020 (COVID-19): Ashley Grudzinski and Natalia Ozymko.

» Spring 2020: Tamara Nelson-Fromm, Natalia Ozymko, Matt McCarthy, Rittika Adhikari, Jackie Osborn, Priyanka Dey, Akhil Mohan, Sizhi Ta, Ashley Grudzinski, Jasmine Domingo, Jesse Gong, Tamun Hanjra, Yoon Kyung "Lina" Hong, Katy Miles, Emily Jepsen, Dean Chou, Gabby Digan, and Elizabeth De Sa E Silva.

» Fall 2019: Rose Novak, Tamera Nelson-Fromm, Aishik Ghosh, Isha Kukadia, Sarah Nadeem, Elaine Wang, Alvina Waseem, Suhirtha Raj, Omar Mbarki, Will Koster, Elaine Houha, Sam Pal, Jackie Oh, Jatin Mathur, Natalia, Ozymko, Matt McCarthy, Rittika Adhikari, James Wang, Jackie Osborn, Caren Zeng, Ophir Sneh, Michael Kokkines, Anna Buyevich, Nupoor Gandhi, Prajakti Jinachandran, Elizabeth De Sa E Silva, Jasmine Domingo, Dean Chou, Gabby Digan, Jesse Gong, and Tamun Hanjra.

» Spring 2019: Grace Cao, Suhirtha "Suhi" Raj, Alecia Bell, Anu Devarmanai, Aparajitha Adiraju, Adrian Clark, Annie Kim, Ashley Zhao, Devanshi Pratap, Eddie Huang, Francisco Carreon, Grant Li, Hana Rimawi, Jack Henhapl, James Wang, Jacqueline Osborn, Jeremy Hu, Utsav Kawrani, Kanika Punhani, Natalia Ozymko, Nathan Walters, Jordi Paris Ferrer, Piotr Galusza, Rahul Rameshbabu, Rittika Adhikari, Rose Nowak, Simeng Liu, Siping Meng, Shreyas Patil, Sam Pal, Tamara Nelson-Fromm, Jenny Chen, and Xinyu Li.

» Fall 2018: Emily Chen, Tina Abraham, Anna Buyevich**,** Alecia Bell, Adrian Clark, Annie Kim, Aidan San, Ashley Zhao, Devanshi Pratap, Eddie Huang, Francisco Carreon, Franklin Ye, Genevieve Helsel, Grant Li, Hana Rimawi, Jackie Osborn, Jeremy Hu, Utsav Kawrani, Jessie Le, Kanika Punhani, Ema Milojkovic, Nikhil Modak, Nathan Walters, Jennifer He, Jordi Paris Ferrer, Piotr Galusza, Rahul Rameshbabu, Rittika Adhikari, Rohan Khanna, Simeng Liu, Siping Meng, Sylvia Haas, Shreyas Patil, Jenny Chen, and Xinyu Li.

» Spring 2018: Devin Oliver, Kara Landolt, Tina Abraham, Adrian Clark, Aidan San, Alecia Bell, Allegra Domel, Annie Kim, Ashley Zhao, Eddie Huang, Ema Milojkovic, Emma Chen, Franklin Ye, Genevieve Helsel, Grant Li, Hana Rimawi, Jennifer He, Jessie Le, Jordi Paris Ferrer, Kanika Punhani, Kelly Mack, Lauren Smith, Matt Rastovac, Nathan Walters, Nikhil Modak, Piotr Galusza, Raajesh Arunachalam, Rahul Rameshbabu, Rohan Khanna, Shreyas Patil, Simeng Liu, Siping Meng, Stan Gurtler, Sylvia Haas, Utsav Kawrani, Victorique Pang, and Xinyu Li.

» Fall 2017: Aashna Makkar, Aidan San, Allegra Domel, Anushri Devarmanai, Apoorva Dixit, Arman Tajback, Ashley Zhao, Bliss Chapman, Ema Milojkovic, Emma Chen, Franklin Ye, Grant Li, Ishaque Shaikh, Jenny Tran, Jessie Le, Jordi Paris Ferrer, Kanika Punhani, Kelly Mack, Lauren Smith, Matt Rastovac, Mike Peretz, Nathan Beauchamp, Nathan Walters, Nikhil Modak, Ning Wang, Patrick Hurtado, Ruiqian Yao, Shreyas Patil, Stan Gurtler, Sylvia Haas, Travis Newgren, Victorique Pang, and Xinyu Li.

» Spring 2016: Alec Mori, Corly Leung, Tim Krock, Emilee Noh, and Aaron Palmer.

» Fall 2015: Alec Mori, Corly Leung, Han Chen, Kelly Mack, Tim Krock, Ashley Simon, Jake Akstins, Ali Alagha, Reid Butler, Brianna Collender, Ryan Eifert, Emma Lazar, Emilee Noh, Jordyn Kass, Cynthia Qi, Caroline Breckenfelder, Leah Lach, Emily Chou, Coco Wang, Lexi Grochowski, Emma Moore, Piotr Chmielewski, and Eric Chai.

» Spring 2015: Richard Kacirek, Catherine Kang, Tim Krock, Ashley Simon, and Eric Zhang.

» Fall 2014: Richard Kacirek, Catherine Kang, Tim Krock, Sonia Mohanlal, Ashley Simon, Tom Yan, and Eric Zhang.

Teaching Assistant

» CS 241: System Programming (Spring 2008 - Fall 2012), under the direction of Lawrence Angrave (Spring 2008), Robin Kravets (Fall 2008, Spring 2010, Spring 2011, Fall 2011, Fall 2012), Indranil Gupta (Fall 2008), Vikrum Adve (Spring 2009, Spring 2011), Tarek Abdelzaher (Spring 2009), Marco Caccamo (Fall 2009, Fall 2010, Spring 2013), Philip Brighten Godfrey (Spring 2010, Spring 2012), Sam King (Fall 2010), and Matt Caesar (Fall 2011).

» CS 173: Discrete Structures (Fall 2007), under the direction of Jeff Erickson and Cinda Heeren.

— Awards and Grants —

Awards

» Rose Award for Teaching Excellence (2023), awarded by Grainger College of Engineering at The University of Illinois; *"[The Rose Award] recognizes teachers who excel at motivating freshman and sophomore students to learn and appreciate engineering."*

» Center for Innovation in Teaching and Learning (CITL) Faculty Fellow (2021-2024), The University of Illinois; Provost-level fellow given to two faculty each year to focus on innovation in teaching and learning.

» Provost's Award for Excellence in Undergraduate Teaching (2020), the top undergraduate teaching award at The University of Illinois; recognizes the *"...sustained excellence and innovation in undergraduate teaching and contributions to undergraduate learning beyond classroom instruction."*

» College of Liberal Arts and Science Impact Award (2020) with Caitlin Clarke, University of Illinois; *"...for providing data-forward analysis and visualization of COVID-19 data, which was used by multiple governors and helped establish Illinois as a COVID-19 leader in national media."*

» Grainger College of Engineering's Recognition for COVID-19 Research (2020) University of Illinois; *"...recognize individuals and affiliates that came together in various ways during the pandemic to create life-changing solutions."*

» Scott H. Fisher Computer Science Teaching Award (2019), awarded to one faculty each year by the Department of Computer Science; *"[The Fisher Award is] the first departmental award to focus on recognizing the importance of, and excellence in, teaching."*

» Chi Omega's Outstanding Faculty Award (2018), *"A University-level award for excellence in teaching and mentoring"*, awarded by the Chi Omega chapter at The University of Illinois.

» Engineering Council's Award for Excellence in Advising (2018), awarded by the Engineering Council of the Grainger College of Engineering at The University of Illinois.

» Collins Award for Innovative Teaching (2017), awarded by Grainger College of Engineering at The University of Illinois; *"This award recognizes outstanding development or use of new and innovative teaching methods."*

» Invited Guest: National Academy of Engineering's Frontiers of Eng. Ed. (2016), invited by the National Academic of Engineering; *"The Frontiers of Engineering Education (FOEE) Symposium brings together some of the nation's most engaged and innovative engineering educators in order to recognize, reward, and promote effective, substantive, and inspirational engineering education."*

» Teachers Ranked as Excellent by Their Students (2008, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2022, 2023, 2024), awarded based on student course evaluations run by the Center for Innovation in Teaching and Learning (CITL) at The University of Illinois.

» Chirag Foundation Fellow (2006), awarded by the Department of Computer Science at The University of Illinois.

» First Prize in Polytechnic University's National Security Challenge (2005), placed first in a national, multi-university contest to find security vulnerabilities in a secure web-based software system (Prize Value: $1,299).

» University of Texas at Dallas GetDoc Fellow (2005), awarded by the Department of Computer Science at The University of Texas at Dallas.

Grants

» Investment for Growth (IfG) at The University of Illinois; "National Leadership in Data Science Education Supporting a Significant Visible Social Impact"; Co-PIs: <u>W. Fagen-Ulmschneider</u>, K. Flanagan. $1,042,650.

» Discovery Partners Institute (DPI); "Proposal for the Development of Data Science Content for Upskilling Efforts at Discovery Partners Institute and Other Uses"; Co-PIs: <u>W. Fagen-Ulmschneider</u>, K. Flanagan. $107,000.

» Strategic Instructional Innovations Program (SIIP) from the Academy for Excellence in Engineering Education (AE3), Grainger College of Engineering, University of Illinois; "Broadening and Evaluating Support for Effective Office Hours in Large Courses Using a Digital Queue System"; Co-PIs: <u>W. Fagen-Ulmschneider</u>, K. Flanagan, K. Jensen, L. Angrave, D. Mussulman. $30,000.

» Campus Innovation Grant from the Office of the Provost at The University of Illinois; "Deploying a Phone and Web-based Digital Queue for TA Office Hours"; Co-PIs: <u>W. Fagen-Ulmschneider</u>, K. Flanagan. $4,000 (x2).

» Strategic Instructional Innovations Program (SIIP) from the Academy for Excellence in Engineering Education (AE3), Grainger College of Engineering, University of Illinois; "Computerized Testing"; Co-PIs: C. Zilles, L. Angrave, B. Bailey, <u>W. Fagen</u>, C. Heeren, and K. Karahalios. $100,000.

» Strategic Instructional Innovations Program (SIIP) from the Academy for Excellence in Engineering Education (AE3), Grainger College of Engineering, University of Illinois; "Adaptive Learning"; Co-PIs: M. West, G. Dullerud, <u>W. Fagen</u>, S. Oh, C. Zilles. $113,000.

— Service —

Departmental Service in Computer Science

» Computer Science Capricious Grading Committee; Member (2023-).

» Computer Science Undergraduate Study Committee; Member (2019-).
  » Chair, Data Science Subcommittee (2019-'20).

» Computer Science Faculty Mentor to Undergraduate Students; Mentor (2015-2023).

» Computer Science Instructional Faculty Committee; Member (2013-).

» Department of Computer Science Advisory Committee to the Head; Member, by election from CS department faculty (2019-'21).

» Computer Science Academic Integrity Appeals Committee; Member (2017-'21).

» Computer Science Committee on Technology Facilities and Services; Chair (2015-'18), Member (2013-'15, 2018-'19).

» Computer Science Committee for Instructional Faculty Recruiting; Member (2014-'15).

» Computer Science Working Group on MOOC Platform Evaluation; Working Group Lead (2014).

College and University Service

» Senate Committee on Educational Policy (EdPol), University of Illinois.
  » Subcommittee Chair (2023-).
  » Member, by election from the University of Illinois Senate (2021-).

» Provost's Working Group on Data Science Education, University of Illinois; Member (2018-).

» University of Illinois Senate; Faculty Senator, by election from CS department faculty (2019-'23).

» Promoting Undergraduate Research Experience (PURE), Grainger College of Engineering; Faculty Mentor, (2018-'22).

» Faculty Advisory Committee for the Informatics Minor; Member (2017-'22).

» Grainger College of Engineering Strategic Planning Subcommittee for Undergraduate Education; Member (2019).

» Working Group for the Campus Instructional Facility (CIF); Member, (2017-'19).

» "Test Kitchen" Subcommittee of the Working Group for the Campus Instructional Facility (CIF); Member, (2017-'19).

» Special Committee for Curriculum in the Carle Illinois College of Medicine; Member, (2015-'16).

Community Engagement

» Invited Speaker » Academy for Excellence in Engineering Education (AE3)'s Collins Scholars (Feb. 2024); "Managing Instructional Staff", with Blake Johnson; University of Illinois.

» Invited Judge » Big Ten Academic Alliance Data Visualization Championship Campus Competition (Jan. 2024); University of Illinois.

» Invited Speaker » Illini Fest (Oct. 2023); University of Illinois.

» Invited Speaker » University of Illinois Data Science Club (Oct. 2023); University of Illinois.

» Invited Speaker » Gies Scholar Honors Program (Oct. 2023); Gies College of Business, University of Illinois.

» Invited Speaker » Illinois Computing Accelerator for Non-Specialists (iCAN) (2022, 2023); Department of Computer Science, University of Illinois.

» Invited Keynote Speaker » University of Illinois' SAIL (2022, 2023, 2024); "Faculty Talk"; University of Illinois.

» Invited Speaker » Illinois Solar Car Team (2022, 2024); "Nerding Out with Data Visualization"; Department Electrical and Computer Engineering, University of Illinois.

» Invited Workshop » Women in Computer Science's Annual "ChicTech" Event for High School Students Interested in CS (2022, 2023, 2024); "Nerding Out with Data Visualization", University of Illinois.

» Invited Panelist » Art of Teaching Seminar (2021); Center for Innovation in Teaching and Learning at The University of Illinois, "What I Know Now – Lessons about Teaching and Learning", with Michel Bellini, Shelly Schmidt, Leon Liebenberg, and Karle Flanagan.

» Invited Workshop » Women in Computer Science's Annual "ChicTech" Event for High School Students Interested in CS (2021); "ChicTech Workshop on Data Science and Visualization Systems", with Rittika Adhikari; University of Illinois.

» Invited Speaker » Illinois Business Council (2021); "Getting Lucky: Data Science to Influence Luck",

with Karle Flanagan; University of Illinois.

» Invited Speaker » Gies College of Business' Honor Program (2021); "Storytelling and Data Visualization", with Karle Flanagan; Virtual Presentation (Zoom).

» Invited Speaker » Academy for Excellence in Engineering Education (AE3)'s Collins Scholars (2021); "Managing Instructional Staff", with Matt West; University of Illinois.

» Invited Speaker » Illinois Webmasters (2021); "Capturing Audiences with Data Visualization Systems and Pre-attentive Features"; Virtual Presentation (Zoom).

» Invited Workshop » HackIllinois (2021); "Data Science Workshop"; Livestreamed Presentation (YouTube).

» Invited Speaker » Illinois International (2021); "Discovering Data Science: Data Visualizations", with Karle Flanagan; University of Illinois.

» Invited Speaker » Academy for Excellence in Engineering Education (AE3)'s "Launching the Campus Instructional Facility (CIF) and Using Active Learning Spaces Successfully" (2021); "Teaching in the Round and 2035 CIF "; Virtual Presentation (Zoom).

» Invited Speaker » University of Illinois' Summer Teaching Institute (2021); "Engaging Across Modalities in Large Lecture Courses", with Elise McCarren and Karle Flanagan; Virtual Presentation (Zoom).

» Invited Keynote Speaker » University of Illinois' SAIL (2021); "Faculty Talk"; Virtual Presentation (Zoom).

» Invited Speaker » Illinois Solar Car Team (2020); "Telematics and Data Visualization w/ The Solar Car"; Department Electrical and Computer Engineering, University of Illinois.

» Invited Speaker » "HackThis" Hackathon (2020); "Intro to Data Science in Python"; Livestreamed Presentation (YouTube).

» Invited Panelist » Pixo Consulting (2020)**;** Virtual Presentation (Zoom).

» Invited Speaker » Champaign-Urbana Data Science User Group (2020); "Data Visualization and 91-DIVOC"; Virtual Presentation (Zoom).

» Invited Panelist » University of Illinois' Bioengineering Summer Camp (2020); "Engineering Response to the COVID-19 Pandemic"; Virtual Presentation (Zoom).

» Invited Hackathon Judge » HackIllinois Hackathon (2020); University of Illinois.

» Invited Hackathon Judge » Code Ada Hackathon (2019); Women in Computer Science, University of Illinois.

» Invited Speaker » Illinois Solar Car Team (2019); "Telematics and Data Visualization"; Department Electrical and Computer Engineering, University of Illinois.

» Invited Speaker » Alpha Phi Omega (2019); "Data Science and The University of Illinois", with Karle Flanagan; University of Illinois.

» Invited Guest » Association of Computer Machinery (ACM) Student Chapter at The University of Illinois (2019); "Professor Day"; University of Illinois.

» Invited Speaker » Illinois Business Council (2019); "Data Science and The University of Illinois", with Karle Flanagan; University of Illinois.

» Invited Panelist » Women in Computer Science (2019); "Mental Health in Computer Science"; University of Illinois.

» Invited Speaker » Champaign-Urbana Data Science User Group (2019); "Data Science and The University of Illinois"; Research Park, Champaign, IL.

» Video Vignette » Center for Innovation in Teaching and Learning (2019); "Deploying a Phone and Web-Based Digital Queue for TA Office Hours"; University of Illinois.

» Invited Speaker » Illinois Solar Car Team (March 2019); "Telematics"; Department Electrical and Computer Engineering, University of Illinois.

» Invited Hackathon Judge » HackIllinois Hackathon (2019); University of Illinois.

» Invited Research Poster Session Judge » PURE: Promoting Undergraduate Research Experience (2017, 2018, 2019); University of Illinois.