Eunice Jun

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Research Mission

To enable rigorous science through computational abstractions and reasoning that promote valid data analysis, robust experimental design, and transparent reporting

Specialization:	Human-Computer Interaction
Other interests:	Programming Languages/Software Engineering, Statistics, Data Science
Current topics:	domain-specific languages, causal inference, automated reasoning, end-user programming

Appointments

2024-Present **University of California, Los Angeles**
Assistant Professor, Computer Science Department

Education

2023 **University of Washington**
Ph.D., Computer Science & Engineering
Thesis: *Data Analysis Tools for Statistical Non-experts*
Committee: Jeffrey Heer (advisor), René Just (advisor), Emery Berger (CS, external), Leilani Battle (CS), Tyler H. McCormick (Statistics)

2019 **University of Washington**
M.S., Computer Science & Engineering
Thesis: *Surfacing and Designing for Participant Learning and Interest in Online Experiments*
Committee: Katharina Reinecke, Gary Hsieh

2016 **Vanderbilt University**
B.S., Computer Science & Engineering (honors), Cognitive Studies (honors)
Thesis: *Gap and Ledge Affordance Judgments with Training Using the Oculus Rift DK2*
Advisors: Bobby Bodenheimer (computer graphics), John Rieser (psychology)

Publications

Refereed Conference and Journal Papers with Recognition

* signifies research mentees

CHI24 **Eunice Jun**, Edward Misback*, Jeffrey Heer, and René Just. rTisane: Externalizing conceptual models for data analysis prompts reconsideration of domain assumptions and facilitates statistical modeling. pages 1–16, 2024. `https://dl.acm.org/doi/pdf/10.1145/3613904.3642267` Best Paper Award (top 1%)

CHI22 **Eunice Jun**, Audrey Lee Seo*, Jeffrey Heer, and René Just. Tisane: Authoring statistical models via formal reasoning from conceptual and data relationships. In *Proceedings of the 2022 ACM Conference on Human Factors in Computing Systems (CHI)*, pages 1–16, 2022 Best Paper Honorable Mention (top 5%)

CSCW17 **Eunice Jun**, Gary Hsieh, and Katharina Reinecke. Types of motivation affect study selection, attention, and dropouts in online experiments. *Proceedings of the ACM on Human-Computer Interaction*, 1(CSCW):1–15, 2017 Best Paper Honorable Mention (top 5%)

TAP15 **Eunice Jun**, Jeanine K Stefanucci, Sarah H Creem-Regehr, Michael N Geuss, and William B Thompson. Big foot: Using the size of a virtual foot to scale gap width. *ACM Transactions on Applied Perception (TAP)*, 12(4):1–12, 2015 Selected for special issue

Refereed Conference and Journal Papers

* signifies research mentees

UIST23 Edward Misback*, Caleb C Chan, Brett Saiki, **Eunice Jun**, Zachary Tatlock, and Pavel Panchekha. Odyssey: An interactive workbench for expert-driven floating-point expression rewriting. In *Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology*, pages 1–15, 2023. `https://dl.acm.org/doi/pdf/10.1145/3586183.3606819`

CHI23 Ken Gu*, **Eunice Jun**, and Tim Althoff. Understanding and supporting debugging workflows in multiverse analysis. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*, pages 1–19, 2023. `https://arxiv.org/abs/2210.03804`

HA22 Emily K Johnson, Matthew A Wojtesta, Sawyer W Crosby, Herbert C Duber, **Eunice Jun**, Haley Lescinsky, Phong Nguyen, Maitreyi Sahu, Azalea Thomson, Golsum Tsakalos, et al. Varied health spending growth across US states was associated with incomes, price levels, and Medicaid expansion, 2000–19: Study examines factors associated with health spending growth across the US. *Health Affairs*, 41(8):1088–1097, 2022 External collaboration using my research tools

SCF22 Jasper Tran O'Leary, **Eunice Jun**, and Nadya Peek. Verso: Extending computational notebooks for exploratory digital fabrication. In *ACM Symposium on Computational Fabrication*, 2022. `https://dl.acm.org/doi/10.1145/3559400.3561998`

TOCHI22 **Eunice Jun**, Melissa Birchfield*, Nicole De Moura*, Jeffrey Heer, and René Just. Hypothesis formalization: Empirical findings, software limitations, and design implications. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 29(1):1–28, 2022

TAC21 Daniel McDuff, **Eunice Jun**, Kael Rowan, and Mary Czerwinski. Longitudinal observational evidence of the impact of emotion regulation strategies on affective expression. *IEEE Transactions on Affective Computing*, 12(3):636–647, 2019

UIST19 **Eunice Jun**, Maureen Daum, Jared Roesch, Sarah Chasins, Emery Berger, René Just, and Katharina Reinecke. Tea: A high-level language and runtime system for automating statistical analysis. In *Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology*, pages 591–603, 2019

CSCW19 **Eunice Jun**, Daniel McDuff, and Mary Czerwinski. Circadian rhythms and physiological synchrony: Evidence of the impact of diversity on small group creativity. *Proceedings of the ACM on Human-Computer Interaction*, 3(CSCW):1–22, 2019

EuroVis19 Yang Liu, **Eunice Jun**, Qisheng Li, and Jeffrey Heer. Latent space cartography: Visual analysis of vector space embeddings. In *Computer Graphics Forum*, volume 38, pages 67–78. Wiley Online Library, 2019

CSCW18 **Eunice Jun**, Blue A Jo*, Nigini Oliveira, and Katharina Reinecke. Digestif: Promoting science communication in online experiments. *Proceedings of the ACM on Human-Computer Interaction*, 2(CSCW):1–26, 2018

L@S18 **Eunice Jun**, Morelle Arian, and Katharina Reinecke. The potential for scientific outreach and learning in Mechanical Turk experiments. In *Proceedings of the Fifth Annual ACM Conference on Learning at Scale*, pages 1–10, 2018

CHI17 Nigini Oliveira, **Eunice Jun**, and Katharina Reinecke. Citizen science opportunities in volunteer-based online experiments. In *Proceedings of the 2017 ACM Conference on Human Factors in Computing Systems (CHI)*, pages 6800–6812, 2017

Selected Workshop Papers, Posters, Demos, and Doctoral Symposia

* signifies research mentees

UIST2024b Cyrus Vachha*, Yixiao Kang*, Zach Dive*, Ashwat Chidambaram, Anik Gupta, **Eunice Jun**, and Bjoern Hartmann. Dreamcrafter: Immersive editing of 3d radiance fields through flexible, generative inputs and outputs. In *Adjunct Proceedings of the 37th Annual ACM Symposium on User Interface Software and Technology (Poster)*, pages 1–3, 2024

UIST2024a Pragya Kallanagoudar*, Chithra Anand*, Rolando Garcia, Rebecca MM Hicke, Aditya Parameswaran, **Eunice Jun**, and Sarah E Chasins. Quilt: Custom uis for linking unstructured documents to structured datasets. In *Adjunct Proceedings of the 37th Annual ACM Symposium on User Interface Software and Technology (Demo)*, pages 1–4, 2024

CHI2024	**Eunice Jun**. Hypothesis formalization: Sensemaking during data analysis. In *Sensemaking Workshop, ACM CHI*, 2024
UIST23	Edward Misback*, Caleb C Chan, Brett Saiki, **Eunice Jun**, Zachary Tatlock, and Pavel Panchekha. Odyssey: An interactive workbench for expert-driven floating-point expression rewriting. In *Companion of the 2023 ACM Conference on User Interface Software and Technology (Demo)*, 2023
UIST22b	Jasper Tran O'Leary, **Eunice Jun**, and Nadya Peek. Demonstrating Verso: Extending computational notebooks for exploratory digital fabrication. In *Companion of the 2022 ACM Conference on User Interface Software and Technology (Demo)*, 2022
UIST22a	**Eunice Jun**. Empowering domain experts to author valid statistical analyses. In *Companion of the 2022 ACM Conference on User Interface Software and Technology (Doctoral Symposium)*, 2022
HDI@VIS21	Melissa Birchfield* and **Eunice Jun**. Adapting reorderable matrices for qualitative analysis. 2021
DUB21	**Eunice Jun**. Ensuring valid statistical analyses for domain experts. In *Doctoral Symposium at DUB, University of Washington*, 2021
PLATEAU20	Josh Pollock*, Grace Oh*, **Eunice Jun**, Philip J Guo, and Zachary Tatlock. The essence of program semantics visualizers: A three-axis model. *11th Annual Workshop on the Intersection of HCI and PL (PLATEAU)*, 2020
PLATEAU19	**Eunice Jun**, Emery Berger, and Ben Zorn. The Scone DSL: Smart sampling for smarter statistics. *10th Annual Workshop on the Intersection of HCI and PL (PLATEAU)*, 2019
PNWPLSE18	**Eunice Jun**, Jared Roesch, and Sarah Chasins. Experimental design as programs. *Pacific Northwest Programming Languages and Software Engineering (PNW PLSE) Workshop*, 2018
CHI17	**Eunice Jun**, Bernd Huber, Krzysztof Z Gajos, and Katharina Reinecke. How curiosity attracts participation in volunteer-based online experiments. *Designing for Curiosity Workshop, ACM Conference on Human Factors in Computing Systems (CHI)*, 2017
CSCW17	Nigini Oliveira, **Eunice Jun**, Trevor Croxson, Krzysztof Z Gajos, and Katharina Reinecke. Labinthewild: How to design uncompensated, feedback-driven online experiments. In *Companion of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (Demo)*, pages 25–28, 2017
GHIC14	**Eunice Jun** and Rachael Grenfell-Dexter. Maníplus: A holistic approach to malnutrition in Guatemala. *Global Health and Innovation Conference*, 2014

Open-source Software

Cuppa	Github organization for Tisane, Tea, and related projects `https://github.com/tea-lang-org`
rTisane	High-level domain-specific language and interactive system for authoring generalized linear models and generalized linear mixed-effects models in R `rtisane.tisane-stats.org`
Tisane	High-level domain-specific language and interactive system for authoring generalized linear models and generalized linear mixed-effects models in Python `tisane-stats.org`
Tea	High-level domain-specific language (embedded in Python) for automatically selecting common Null Hypothesis Significance Tests `tea-lang.org`

Selected Multidisciplinary Collaborations

2022-present	**External collaborator**. Collaborators: Rrita Zejnullahi, Tyler H. McCormick Publications: WIP22b
2021-2023	**Volunteer Research Collaborator, Domestic Expenditure team at the Institute for Health Metrics and Evaluation**. Supervisor: Joseph Dieleman Publications: HA22

2021 **Volunteer Research Collaborator, Malaria Tracking team at the Institute for Health Metrics and Evaluation**.
Supervisors: Joseph Dieleman, Angela Micah

Invited Talks and Presentations

Enhancing Statistical Validity with Usable Abstractions and Interactive Tools
2024 Inaugural Berkeley-Stanford Veridical Data Science Workshop. Host: Bin Yu. Berkeley, CA, USA

Data Analysis Tools for Statistical Non-experts
2024 Epidemiology & Biostatistics, University of Illinois, Chicago. Zoom
2023 Berkeley Institute of Design, University of California, Berkeley. Berkeley, CA, USA
Computer Science Department, University of Texas, Austin. Austin, TX, USA
Electrical Engineering & Computer Science Department, Massachusetts Institute of Technology. Boston, MA, USA
Department of Computer Science, Brown University. Providence, RI, USA
School of Electrical Engineering and Computer Science, Oregon State University. Zoom
Computer Science Department, Emory University. Atlanta, GA, USA
Computer Science Department, University of California, Los Angeles. CA, USA
Data, Interpretability, Language and Learning Lab, University of Southern California. Host: Swabha Swayamdipta. Zoom
Microsoft Research Causality and Machine Learning team. Host: Emre Kiciman. Zoom
Center for Statistics and the Social Sciences, University of Washington.

Tisane: Authoring Statistical Models via Formal Reasoning from Conceptual and Data Relationships
2022 Industry Affiliates Meeting, University of Washington. Seattle, WA, USA

Re-imagining the Statistical Analysis Toolchain: Tea and other delicacies for data science
2021 Social Futures Lab, University of Washington. Host: Amy X. Zhang. Zoom

Tea: A High-level Language and Runtime System for Automating Statistical Analysis
2020 CS 374: Introduction to HCI, KAIST. Host: Juho Kim. Zoom
Data Science Club, University of Utah. Zoom
2019 Industry Affiliates Meeting, University of Washington, Seattle, WA, USA
Microsoft Machine Learning and Visual Studio team. Host: Neel Sundaresan. Redmond, WA, USA
Microsoft Research. Host: Ben Zorn. Redmond, WA, USA

Virtual Reality & Human-centered Design
2015 Cognition and Action Department (led by Heinrich Bulthoff), Max Planck Institute for Biological Cybernetics. Host: Betty Mohler. Tuebingen, Germany

Selected Honors

2024 **Best Paper Award** for CHI24
2022 **Madrona Grand Prize Runner-up, Madrona VC**
Industry research award for potential academic and business impact for Tea and Tisane
2022 **Best Paper Honorable Mention** for CHI22
2021 **Rising Stars in EECS, MIT**
2018-2022 **Graduate Research Fellowship, National Science Foundation**
Full tuition and $36,000 stipend for three years
2017 **Madrona Grand Prize Winner, Madrona VC**
Industry research award for potential academic and business impact
2017 **Best Paper Honorable Mention** for CSCW17

2016-2017 **Wilma Bradley Endowed Fellowship in Computer Science & Engineering, UW CSE**
Recruitment fellowship for first year of PhD

2014-2016 **Ingram Scholarship Program, Vanderbilt University**
Merit scholarship for leadership and community service, Full tuition and fees

2015 **Barry M. Goldwater Scholarship Honorable Mention**

2015 **TAP Paper Highlight in Special Issue** for TAP15

2013-2014 **Littlejohn Undergraduate Research Fellowship, Vanderbilt University**
Supported anthropology research experience with Edward Fischer, which led to GHIC14

Advising

PhD Advisees (UCLA)

2024-present London Bielicke

2024-present Yuwei Xiao

Additional Research Mentorship

PhD Students

2023-2024 Gabriel Matute (UC Berkeley, now at Databricks), co-advised by Sarah Chasins and Alvin Cheung

2023-2024 Edward Misback (University of Washington), co-advised by Zachary Tatlock and Steve Tanimoto
Co-authored CHI24, UIST24

2022-2023 Ken Gu (University of Washington), advised by Tim Althoff
Co-authored CHI23

2021 Audrey Lee Seo (University of Washington), advised by Dan Grossman
Co-authored CHI22

M.S. Students

2024 Cyrus Vaccha (UC Berkeley, now PhD student at Princeton). With Björn Hartmann.
Co-authored UIST2024b

2024 Yixiao (Aria) Kang (UC Berkeley). With Björn Hartmann
Co-authored UIST2024b

2024 Zachary Dive (UC Berkeley). With Björn Hartmann
Co-authored UIST2024b

2020-2021 Vincent Pun (University of Massachusetts, Amherst). With Anna Fariha, Emery Berger, Peter Hass, Alexandra Meliou
Explored challenges to usable, interactive sampling techniques

2020 Irene Luo (Columbia University, Flat Iron Institute). With Aaron Watters (at Flat Iron Institute)
Explored and prototyped data visualizations for Tea

B.S. Students

2023-present Pragya Kallanagoudar (UC Berkeley). With Sarah Chasins
Co-authored UIST2024a

2023-present Chithra Anand (UC Berkeley). With Sarah Chasins
Co-authored UIST2024a

2021-2022 Shreyash Nigam (University of Washington). With Audrey Lee Seo, Jeffrey Heer
Updating Tea API
Explored ways to improve Tisane

2021-2022 Annie Denton (University of Washington). With Jeffrey Heer
Surveyed outputs for statistical tests, improved Tea outputs

2021-2022 Reiden Chea (University of Washington). With Jeffrey Heer
Surveyed outputs for statistical tests, improved Tea outputs
Created a GUI for Tea

2019-2021 Melissa Birchfield (University of Washington). With René Just

Honors thesis: *Understanding the Role of Data in Cross-Sector Collaboration to Combat Human Trafficking*
Co-authored HDI@VIS21, TOCHI22

2021 Corinne Herzog (University of Washington). With Jeffrey Heer
Explored ways to revise Tea's constraint system to allow for user-defined soft constraints

2019-2020 Josh M. Pollock (University of Washington, now PhD student at MIT). With Zachary Tatlock
Honors thesis: *Sidewinder: A dynamic program semantics visualization framework*
Co-authored PLATEAU20

2020 Pranav Rajan (University of Utah)
Explored and prototyped data visualizations for Tea

2016-2018 Blue A. Jo (University of Washington). With Katharina Reinecke
Co-authored CSCW18

High School Students

2020 Nicole de Moura (now B.S. student at University of Washington)
Co-authored TOCHI22

2020 Grace Oh (now B.S. student at Princeton University). With Josh Pollock, Zachary Tatlock
Co-authored PLATEAU20

Teaching

Nov. 2022 Guest lecturer, **Introduction to HCI (undergraduate)**. Instructor: Ravi Karkar. University of Massachusetts, Amherst.
Lecture on *Experimental design and statistical analysis* (40 minutes, approx. 60 undergraduate students)

Feb. 2022 Guest lecturer, **Introduction to HCI (graduate)**. Instructor: James Fogarty. University of Washington.
Lecture on *Programming as Interaction: Analysis authoring tools for statistical non-experts* (80 minutes, approx. 50 graduate students)
Introduced research at the intersection of programming languages and human-computer interaction; used my research as a case study for need-finding, theory building, and tool development at the intersection

Feb. 2022 Guest lecturer, **Introduction to HCI (graduate)**. Instructor: James Fogarty. University of Washington.
Lecture on *Experimental design and statistical analysis* (80 minutes, approx. 50 graduate students)
Introduced key concepts related to validity, study design, NHST, and linear modeling, with three learning goals:
(i) grow an understanding of experimental design and statistical analysis terminology
(ii) identify practical considerations for the application of experimental design and statistical methodology
(iii) develop a cognitive framework for approaching and reasoning through knowledge and gaps in knowledge (how to ask for help!)

Jan. 2021 Guest lecturer, **MIT HCI Community of Research Workshop**. Zoom.
Stats crash course: Not your traditional intro to experimental design and NHST. (2 hours)
Taught building blocks of validity, experimental design, and NHST, with two learning goals:
(i) defining terminology and principles behind experimental design and statistical analysis
(ii) application of experimental design and statistical methodology with an emphasis on practical considerations

Winter 2020 Teaching Assistant, **Data visualization (undergraduate)**. Instructor: Matthew Conlen. University of Washington.
Graduate TA for a project-based data visualization course for approx. 120 undergraduates in 30 project groups

Jan. 2020 Mentor, **Community Data Science Workshop**.
Co-led session on Twitter API usage and help session about data scraping questions.

Helped workshop attendees (from greater Seattle community) learn Python programming for data scraping, analysis, and visualization

Winter 2017 Teaching Assistant, **Introduction to HCI (undergraduate)**. Instructor: James Fogarty. University of Washington.
Graduate TA for a project-based introductory course on HCI methods and topics for approx. 50 undergraduates in 16 project groups

Selected Professional Mentorship and Outreach

2017-2020 **Co-organizer**, UW CSE Annual Women's Research Day

2017-2019 **UW CSE Graduate Student Mentor**
Ongoing mentorship of two to three PhD students per year

2017-2018 **Coordinator**, ACM-W Undergraduate Student Mentorship Program
Connect undergraduate and graduate women through ongoing mentorship and regular events

2016-2018 **Mentor**, ACM-W Undergraduate Student Mentor

2015-2016 **Founding Organizer**, Girls Who Code at John Early Middle Prep, Nashville, TN

Professional Activities

Organizing Committee

2021 ACM UIST Diversity Co-chair

2020 ACM UIST Proceedings Co-chair

2019 ACM Creativity & Cognition (C&C) SV Co-chair

Departmental and University Service

2021 HCI area student co-chair for PhD admissions

2020-2021 PhD application reader

2020 Panelist, PhD visit days

2020, 2017 Women's reception committee, PhD visit days

2018-2020 UW Design, Use, Build (DUB) Seminar student coordinator (focus: diversity)

Reviewing

Conferences: ACM CHI: 2019-2023; ACM UIST: 2019-2024; ACM CSCW: 2018, 2020, 2021; IEEE VIS: 2021; ACM DIS: 2017-2018
Symposia: ACM SCF 2022
Journals: *Journal of Artificial Intelligence Research* (JAIR): 2017

Professional Experience

Industry Research

2019 **Microsoft Research**, Graduate Research Intern
Advisors: Ben Zorn, Emery Berger. Group: RiSE
Publication: PLATEAU20

2018 **Microsoft Research**, Graduate Research Intern
Advisors: Daniel McDuff, Mary Czerwinski. Group: HUE (previously VIBE)
Publications: CSCW19, TAC21

Academic Research

2023-2024 **Department of Electrical Engineering and Computer Sciences, University of California, Berkeley**, Postdoctoral Scholar
Mentor: Björn Hartmann

2016-2023 **Paul G. Allen School of Computer Science & Engineering, University of Washington**, Graduate Researcher

2014-2016 **Learning in Virtual Environments Lab, Vanderbilt University**, Undergraduate Researcher
Advisors: Bobby Bodenheimer (CS), John Rieser (Psychology)

2015 **University of College Dublin**, Undergraduate Research Intern
Advisors: David Coyle, Ed Curry
Funding: Ingram Scholarship

Summer 2014 **University of Utah**, NSF REU Intern
Advisors: Bill Thompson (CS), Sarah Creem-Regehr (Psychology), Jeanine Stefanucci (Psychology)
Publication: TAP15

2013-2014 **Center for Latin American Studies, Vanderbilt University**, Undergraduate Researcher
Advisor: Edward Fischer (Anthropology)
Funding: Littlejohn Undergraduate Research Fellowship
Publication: GHIC14

Art and Design

2015 **Tunneling Light Exhibition, University College Dublin**, Contributing Artist
Piece: *Colored Light* (multimedia)
Organizers: Emer O'Boyle, Lorraine Hanlon

2013 **The Curbside Chronicle**, Graphic Designer

References

Jeffrey Heer
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