

Eunice Jun

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Research Mission

Belief	The process of discovery can be just as meaningful as the discovery itself.
Vision	Empower individuals and organizations to understand and act on their data.
Approach	Design new <i>languages</i> and <i>interactions</i> for data analysis.
Current aim	To lower the barrier to <i>valid</i> statistics, especially for <i>researchers</i> who may not be statistical experts.
Areas	Human-Computer Interaction, Software Engineering, Programming Languages, Data Science, all things data!

Education

- 2016-2023 **University of Washington**
Ph.D., Computer Science & Engineering
Committee: Jeffrey Heer (advisor), René Just (advisor), Leilani Battle (CS), Emery Berger (CS), Tyler H. McCormick (Statistics)
- 2019 **University of Washington**
M.S., Computer Science & Engineering
Advisor: Katharina Reinecke, Secondary reader: Gary Hsieh
Thesis: *Surfacing and Designing for Participant Learning and Interest in Online Experiments*
- 2016 **Vanderbilt University**
B.S., Computer Science & Engineering (honors), Cognitive Studies (honors)
Advisors: Bobby Bodenheimer (computer graphics), John Rieser (psychology)
Thesis: *Gap and Ledge Affordance Judgments with Training Using the Oculus Rift DK2*

Publications

- Refereed Conference and Journal Papers
- TBD Jasper Tran O’Leary, **Eunice Jun**, Nadya Peek. Verso: Digital Fabrication Workflows as Live Programs. *Under submission*.
- CHI22 **Eunice Jun**, Audrey Seo, Jeffrey Heer, René Just. Tisane: Authoring Statistical Models via Formal Reasoning from Conceptual and Data Relationships. *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*. New Orleans, Louisiana, USA. 2022. **Best Paper Honorable Mention (top 5%)**.
- TOCHI22 **Eunice Jun**, Melissa Birchfield, Nicole de Moura, Jeffrey Heer, René Just. Hypothesis Formalization: Empirical Findings, Software Limitations, and Design Implications. *ACM Transactions on Computer-Human Interaction (TOCHI)*. 2022.
- TAC21 Daniel McDuff, **Eunice Jun**, Kael Rowan, Mary Czerwinski. Longitudinal Observational Evidence of the Impact of Emotion Regulation Strategies on Affective Expression. *IEEE Transactions on Affective Computing. Volume 12, Issue 3.* 2021.
- 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. *Proceedings of the ACM Conference on User Interface Software and Technology (UIST)*. New Orleans, LA, USA. 2019.

- CSCW19 **Eunice Jun**, Daniel McDuff, 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*. Volume 3, Issue 60 (CSCW). Austin, TX, USA. 2019.
- EuroVis19 Yang Liu, **Eunice Jun**, Qisheng Li, Jeffrey Heer. Latent Space Cartography: Visual Analysis of Vector Space Embeddings. *Computer Graphics Forum*. Volume 38. Issue 3 (Proceedings of EuroVis). Porto, Portugal. 2019.
- CSCW18 **Eunice Jun**, Blue A. Jo, Nigini Oliveira, Katharina Reinecke. Digestif: Promoting Science Communication in Online Experiments. *Proceedings of the ACM on Human-Computer Interaction*. Volume 2, Issue 84 (CSCW). Jersey City, New Jersey, USA. 2018.
- L@S18 **Eunice Jun**, Morelle Arian, Katharina Reinecke. The Potential for Scientific Outreach and Learning in Mechanical Turk Experiments. *Proceedings of the ACM Conference on Learning at Scale (L@S)*. London, UK. 2018.
- CSCW17 **Eunice Jun**, Gary Hsieh, Katharina Reinecke. Types of Motivation Affect Study Selection, Attention, and Dropouts in Online Experiments. *Proceedings of the ACM on Human-Computer Interaction*. Volume 1, Issue 56 (CSCW). Online First. 2017. **Best Paper Honorable Mention (top 5%)**.
- CHI17 Nigini Oliveira, **Eunice Jun**, Katharina Reinecke. Citizen Science Opportunities in Volunteer-Based Online Experiments. *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*. Denver, Colorado, USA. 2017.
- TAP15 **Eunice Jun**, Jeanine K. Stefanucci, Sarah Creem-Regehr, Michael N. Geuss, William B. Thompson. BigFoot: Using the Size of a Virtual Foot to Scale Gap Width. *ACM Transactions on Applied Perception*. Volume 12, Issue 4 (TAP). 2015. **Selected for special issue**.

Workshop Papers, Posters, and Demos

- HDI@VIS21 Melissa Birchfield, **Eunice Jun**. Adapting Reorderable Matrices for Qualitative Analysis. *Human-Data Interaction Workshop at IEEE Visualization Conference (IEEE VIS)*. Virtual. 2021.
- PLATEAU20 Josh Pollock, Grace Oh, **Eunice Jun**, Philip J. Guo, Zachary Tatlock. The Essence of Program Semantics Visualizers: A Three-Axis Model. *11th Annual Workshop on the Intersection of HCI and PL (PLATEAU), co-located with ACM SPLASH*. Virtual. 2020.
- PLATEAU19 **Eunice Jun**, Emery Berger, Ben Zorn. The Scone DSL: Smart Sampling for Smarter Statistics. *10th Annual Workshop on the Intersection of HCI and PL (PLATEAU), co-located with ACM UIST*. New Orleans, Louisiana, USA. 2019.
- PNWPLSE18 **Eunice Jun**, Jared Roesch, and Sarah Chasins. Aperitif: A DSL for Designing Online Experiments. *PNW PLSE Workshop*. Microsoft Research, 2018.
- CHI17 **Eunice Jun**, Bernd Huber, Krzysztof Gajos, Katharina Reinecke. How Curiosity Attracts Participation in Volunteer-based Online Experiments. *Designing for Curiosity Workshop at ACM Conference on Human Factors in Computing Systems (CHI)*. Denver, Colorado, USA. 2017.
- CSCW17 Nigini Oliveira, **Eunice Jun**, Trevor Crosson, Krzysztof Gajos, Katharina Reinecke. LabintheWild: How to Design Uncompensated, Feedback-driven Online Experiments. *Demo at ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW)*. Portland, Oregon, USA. 2017
- GHIC14 **Eunice Jun**, Rachael Grenfell-Dexter. ManiPlus: A Holistic Approach to Malnutrition in Guatemala. *Global Health and Innovation Conference at Yale University*. New Haven, Connecticut, USA. 2014.

Doctoral Symposia

- DUB21 **Eunice Jun**. Ensuring valid statistical analyses for domain experts.. Virtual. 2021.

Open-source Software

- Cuppa Github organization for Tisane, Tea, and related projects
<https://github.com/tea-lang-org>
- Tisane Domain-specific language and interactive system for authoring generalized linear models and generalized linear mixed-effects models
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

- 2021-present **Volunteer Research Collaborator, Domestic Expenditure team at the Institute for Health Metrics and Evaluation.**
Supervisor: Joseph Dieleman
Co-authored paper to come.
- 2021-present **Volunteer Research Collaborator, Malaria Tracking team at the Institute for Health Metrics and Evaluation.**
Supervisors: Joseph Dieleman, Angela Micah

Invited Talks and Presentations

- 2021 **Social Futures Lab, University of Washington.** Host: Amy X. Zhang. Zoom.
Re-imagining the Statistical Analysis Toolchain: Tea and other delicacies for data science
- 2020 **CS 374: Introduction to HCI, KAIST.** Host: Juho Kim. Zoom.
Tea: A High-level Language and Runtime System for Automating Statistical Analysis
- 2020 **Data Science Club, University of Utah.** Zoom.
Tea: A High-level Language and Runtime System for Automating Statistical Analysis
- 2019 **Industry Affiliates Meeting, University of Washington,** Seattle, WA, USA.
Tea: A High-level Language and Runtime System for Automating Statistical Analysis
- 2019 **Machine Learning and Visual Studio team, Microsoft.** Host: Neel Sundaresan. Redmond, WA, USA.
Tea: A High-level Language and Runtime System for Automating Statistical Analysis
- 2019 **Microsoft Research,** Host: Ben Zorn; Redmond, WA, USA
Tea: A High-level Language and Runtime System for Automating Statistical Analysis
- 2015 **Cognition and Action Department (led by Heinrich Bulthoff), Max Planck Institute for Biological Cybernetics.** Host: Betty Mohler. Tuebingen, Germany.
Virtual Reality & Human-centered Design

Selected Honors

- 2021 **Rising Stars in EECS, MIT.**
- 2018-present **Graduate Research Fellowship, National Science Foundation.**
- 2017 **Madrona Grand Prize Winner, Madrona VC**
Industry research award for potential academic and business impact
- 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
- 2015 **Barry M. Goldwater Scholarship Honorable Mention**
- 2014 **Peabody College Undergraduate Travel Award, Vanderbilt University**
- 2013-2014 **Littlejohn Undergraduate Research Fellowship, Vanderbilt University**
Supported anthropology research experience with Edward Fischer, which led to GHIC14 poster presentation

Research Mentorship

- PhD Students
- 2022 Ken Gu, advised by Tim Althoff

2021 Audrey Seo, advised by Dan Grossman
Co-authored CHI22.

M.S. Students

- 2020-2021 Vincent Pun (M.S. student at University of Massachusetts, Amherst). With Emery Berger, Anna Fariha, Peter Hass, Alexandra Meliou
Explored challenges to usable, interactive sampling techniques.
- 2020 Irene Luo (M.S. student at Columbia University, Flat Iron Institute). With Aaron Watters (at Flat Iron Institute)
Explored and prototyped data visualizations for Tea.

B.S. Honors Theses

- 2019-2021 Melissa Birchfield. With René Just, Jeffrey Heer
Understanding the Role of Data in Cross-Sector Collaboration to Combat Human Trafficking.
Co-authored HDI@VIS21 based on experiences co-authoring TOCHI21 and authoring senior thesis.
- 2019-2020 Josh M. Pollock (now PhD student at MIT). With Zachary Tatlock
Sidewinder: A dynamic program semantics visualization framework.
Co-authored PLATEAU20.

B.S. Research Assistantships

- 2021-present Shreyash Nigam (B.S. student at University of Washington). With Audrey Seo
Updating Tea API.
Explored ways to improve Tisane.
- 2021-present Annie Denton (B.S. student at University of Washington). With Jeffrey Heer
Surveying outputs for statistical tests, improving Tea outputs.
- 2021-2022 Reiden Chea (B.S. student at University of Washington). With Jeffrey Heer
Surveyed outputs for statistical tests, improved Tea outputs.
Created a GUI for Tea.
- 2021 Corinne Herzog (B.S. student at University of Washington). With Jeffrey Heer
Explored ways to revise Tea's constraint system to allow for user-defined soft constraints.
- 2020 Pranav Rajan (B.S. student at University of Utah)
Explored and prototyped data visualizations for Tea.
- 2016-2018 Blue A. Jo (B.S. student at University of Washington). With Katharina Reinecke
Co-authored CSCW 2018.

High School Summer Internships

- 2020 Nicole de Moura (now B.S. student at University of Washington).
Co-authored TOCHI21.
- 2020 Grace Oh (now B.S. student at Princeton University). With Josh Pollock, Zachary Tatlock
Co-authored PLATEAU20.

Selected Formal 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

Formal Service

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 UIST: 2019-2022; ACM CHI: 2019-2022; ACM CSCW: 2018, 2020, 2021; ACM DIS: 2017-2018
- Journals: Journal of Artificial Intelligence Research (JAIR): 2017

Teaching

- Feb. 2022 Guest lecturer, **Introduction to HCI (graduate)**. Instructor: James Fogarty. University of Washington.
Lecture on *Programming as Interaction: PL + HCI: 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. (80 minutes, approx. 50 graduate students)
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, and
 - (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, and
 - (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. 100 undergraduates
- Jan. 2020 Mentor, **Community Data Science Workshop**.
Co-led session on Twitter API usage and help session about data scraping questions
Assisted 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. 60 undergraduates

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

- 2016-present **University of Washington**, Graduate Researcher
- 2014-2016 **Learning in Virtual Environments Lab, Vanderbilt University**, Undergraduate Researcher
Advisors: Bobby Bodenheimer (CS), John Rieser (Psychology)
- Jan.-Sept. 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

Last updated: April 30, 2022