Katy Ilonka Gero

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Current

Mar 2023 –   **Postdoctoral Fellow in Computer Science**, Harvard University; supervised by Elena Glassman

Education

2017-2022   **Ph.D. in Computer Science**, Columbia University; advised by Lydia Chilton
Thesis: *AI and the writer: how language models support creative writers*

2017-2019   **M.S. in Computer Science**, Columbia University

2009-2013   **B.S. in Mechanical Engineering**, Massachusetts Institute of Technology

Publications

Full Conference Publications

K. Gero, C. Swoopes, Z. Gu, J. Kummerfeld, E. Glassman. "Visualizing and Characterizing Many Language Model Outputs at Once." *Under review*.

M. Lee, K. Gero, J. Chung, S. Shum, V. Raheja, H. Shen, S. Venugopalan, T. Wambsganss, D. Zhou, E. Alghamdi, T. August, A. Bhat, M. Choksi, S. Dutta, J. Guo, M. Hoque, Y. Kim, S. Knight, S. Neshaei, A. Shibani, D. Shrivastava, L. Shroff, A Sergeyuk, J. Stark, S. Sterman, S. Wang, A. Bosselut, D. Buschek, J. Chang, S. Chen, M. Kreminski, J. Park, R. Pea, Z. Shen, P. Siangliulue. "A Design Space for Intelligent and Interactive Writing Assistants." *Under review*.

T. Long, K. Gero, L. Chilton. "What Happens When the Novelty Wears off? A Longitudinal Study on Generative AI for Science Communication." *Under review*.

K. Gero, T. Long, L. Chilton. "Social Dynamics of AI Support in Creative Writing." in *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)*.

K. Gero, V. Liu, L. Chilton. "Sparks: Inspiration for Science Writing Using Language Models." in *Designing Interactive Systems Conference (DIS '22)*.

K. Gero, L. Chilton, C. Melancon, M. Cleron. "Eliciting Gestures for Novel Note-taking Interactions." in *Designing Interactive Systems Conference (DIS '22)*.

K. Gero, V. Liu, S. Huang, J. Lee, L. Chilton. "What Makes Tweetorials Tick: How Experts Communicate Complex Topics on Twitter" in *Proceedings of the 21st ACM Conference on Computer Supported Cooperative Work & Social Computing (CSCW '21)*.

K. Gero, Z. Ashktorab, C. Dugan, Q. Pan, J. Johnson, W. Geyer, M. Ruiz, S. Miller, D. Millen, W. Geyer. "Mental Models of AI Agents in a Cooperative Game Setting" in *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. 🏆Best Paper Award🏆

K. Gero, C. Kedzie, J. Reeve, L. Chilton. "Low-Level Linguistic Controls for Style Transfer and Content Preservation" in *Proceedings of the 12ᵗʰ International Conference on Natural Language Generation (INLG '19)*.

K. Gero, L. Chilton. "Metaphoria: An Algorithmic Companion for Metaphor Creation" in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19)*.

C. Reinhart, J. Dhariwal, <u>K. Gero</u>. "Biometeorological indices explain outside dwelling patterns based on Wi-Fi data in support of sustainable urban planning." in *Building and Environment*. 2017.

N. Cheng, M. Lobovsky, S. Keating, A. Setapen, <u>K. Gero</u>, A. Hosoi, K. Iagnemma. "Design and analysis of a robust, low-cost, highly articulated manipulator enabled by jamming of granular media." in *International Conference on Robotics and Automation (IEEE '12)*.

Workshop Papers, Posters, and Technical Reports

<u>K. Gero</u>, P. Das, P. Dognin, I. Padhi, P. Sattigeri and K. Varshney. "The incentive gap in data work in the era of large models." in *Nature Machine Intelligence*.

<u>K. Gero</u>, J. Kummerfeld, E. Glassman. "Sensemaking Interfaces for Human Evaluation of Language Model Outputs." in *Workshop on Human Evaluation for Generative Models (NeurIPs '22)*.

<u>K. Gero</u>, A. Calderwood, C. Liu, L. Chilton. "A Design Space for Writing Support Tools Using a Cognitive Process Model of Writing." in *1ˢᵗ Workshop on Intelligent and Interactive Writing Assistants (ACL '22)*.

<u>K. Gero</u>. "How do we audit generative models?" in *Generative AI and HCI Workshop (CHI '22)*.

<u>K. Gero</u>, C. Kedzie, S. Petridis and L. Chilton. "Lightweight Decoding Strategies for Increasing Specificity." *arXiv preprint arXiv:2110.11850 (2021)*.

K. Booten* and <u>K. Gero</u>*. "Poetry Machines: Eliciting Interactive Writing Tools from Poets." in *Proceedings of the 2021 on Creativity & Cognition (C&C '21)*.

A. Calderwood, V. Qiu, <u>K. Gero</u>, and L. Chilton. "How Novelists Use Generative Language Models: An Exploratory User Study." in *1ˢᵗ Workshop on Human-AI Co-Creation with Generative Models (IUI '20)*.

<u>K. Gero</u>, L. Chilton. "How a Stylistic, Machine-Generated Thesaurus Impacts a Writer's Process." in *Proceedings of the 2019 on Creativity & Cognition (C&C '19)*.

<u>K. Gero</u>, L. Chilton. "Challenges in Finding Metaphorical Connections." in *Proceedings of the Workshop on Figurative Language Processing (NAACL '18)*.

Research Internships

Jun – Aug 2022   **IBM Research**, Yorktown Heights, NY; Mentor: Kush Varshney
Investigated data work in text generation; resulted in Nature Machine Intelligence publication.

Jun – Aug 2021   **Google Research**, New York, NY; Mentor: Chris Melancon
Ran study on novel stylus gestures for note-taking; resulted in DIS paper.

Jun – Aug 2019   **IBM Research**, Cambridge, MA; Mentor: Zahra Ashktorab
Ran study on mental models of AI; resulted in CHI Best Paper Award.

Employment

Mar 2016 –   **Soofa**, Research & Development Lead, Cambridge, MA
Aug 2017   Soofa creates technology for cities, like solar-powered transit signs.
Managed research projects on the Soofa Platform.

Aug 2013 –   **Rest Devices**, Product Developer, Boston, MA
Mar 2016   Rest Devices designed and manufactured a soft, wearable baby monitor.
Oversaw manufacturing; designed and implemented new algorithms.

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* Equal contribution

Funding

2023   Making Sense of Language Model Outputs for End-User Tasks
Amazon Research Award, Amazon Science, $70,000

2019   An AI Tool to Help Scientists Explain Technical Work to the Public
Magic Grant, The Brown Institute for Media Innovation, $65,000

2018   Making art in an age of algorithms: Critical readings across the disciplines
Seed Grant for Interdisciplinary Research, Columbia University, $2,000

Fellowships, Awards & Recognition

2023-24 Library Innovation Lab Fellow, *Harvard University*
2023-24 Embedded EthiCS Teaching Fellow, *Harvard University*
2023   EECS Rising Stars Workshop Selected Participant, *Georgia Tech*
2022   Paul Charles Michelman Memorial Award for Exemplary Service, *Columbia University*
2018   Graduate Student Digital Project Honorable Mention, *NYC Digital Humanities*
2017   Provost's Diversity Fellowship, *Columbia University*
2017   Graduate Research Fellow (NSF GRFP), *National Science Foundation*
2013   Carl G. Sontheimer Prize for Excellence in Innovation & Creativity, *Massachusetts Institute of Technology*

Teaching Experience

Teaching Assistant

2019   Introduction to Natural Language Processing (CS 4705), Columbia University
Upper-level undergraduate course (Instructor: Kathy McKeown)

2018   Advanced Web Design Study (COMS 6998), Columbia University
Upper-level undergraduate course (Instructor: Lydia Chilton)

Guest Lectures

2023   Human Controllability & Assisted Writing, *Carnegie Mellon University*, Human-Centered NLP Class
2021   Social Media for Technical Communication, *Columbia University*, Communicating Data & Statistics
2020   Accessible Design, *Columbia University*, Advanced Web Design Studio

Invited Talks

2023   AI and the Writer, *Harvard Kennedy School*, Belfer Center for Science and International Affairs
2023   AI and the Writer, *Amazon AWS*, Human in the Loop Science Summer Seminar Series
2023   The Incentive Gap in Data Work, *Observable*, Data and Donuts
2023   AI and the Writer, *Secure AI*, Lunch-n-Learn
2023   AI and the Writer, *Unversity of Colorado Boulder*, ATLAS Institute
2021   AI Support Tools, *Conversations with The Browser*
2021   Path to PhD, *Rutgers University*, Douglass Project for Women in STEM
2020   Technology for Writing, *AI4ALL*, AI4ALL Summer Program
2020   Technology for Writing, *Ignition Hacks*
2020   Technology for Writing, *Columbia University*, Demystifying the Dissertation Speaker
2019   Semantic Tools for Writers, *Dartmouth College*, Computational Models & Mimesis Symposium
2019   AI Tools for Creative Writing, *Grammarly*, NLP Meeting

Community Service

2019-22 Mentor for **Women in Science at Columbia** and **Women in Computer Science**, Columbia University
Various semester-based career mentorship for undergrads.

2021 Mentor for **BEARS Research Program for Women**, Barnard College
Run monthly meetings with five undergrads to demystify research.

2020-21 Organizer of **Pre-Application Review Program** for PhD Applicants, Columbia University
With Chris Kedzie, initiated this now-permanent program to improve equity in PhD admission process.

2019-20 Academic Chair for **Women in Computer Science** (WiCS) Club, Columbia University
Ran events to introduce undergraduates to research.

Professional Service

2024 Registration Co-Chair, *Creativity and Cognition (C&C)*
2024 Co-Organizer, *Workshop on Intelligent and Interactive Writing Assistants*, CHI
2023 Associate Chair, *Computer Supported Cooperative Work (CSCW)*
2023 Co-Organizer, *Workshop on Intelligent and Interactive Writing Assistants*, CHI
2022 Co-Organizer, *Workshop on Intelligent and Interactive Writing Assistants*, ACL
2021 Co-Organizer, *Workshop on Human-AI Co-Creation with Generative Models*, IUI
2020 Co-Organizer, *Workshop on Human-AI Co-Creation with Generative Models*, IUI

Reviewing

2023 CHI, TOCHI, UIST, CSCW, TheWebConf, HAI-GEN, FDG
2022 CHI, UIST, TOCHI, DIS, DH, FigLang, HAI-GEN, HMCaT
2021 CHI, TOCHI, IJHCI, DIS, C&C, CSCW
2020 UIST, HAI-GEN

Undergraduate and Master's Mentees

Leah Teichholtz, Harvard CS Undergraduate
Vanessa Hu, Harvard CS Undergraduate
Sarah Huang, Barnard CS Undergraduate
Jennifer Lee, Columbia CS/Literature Undergraduate → Stanford Modern Thought and Literature PhD
Vivian Qiu, Columbia CS/Creative Writing Undergraduate → AlphaSights Manager
Charlotte Li, Columbia CS Undergraduate → Northwestern Computer Science PhD
Alex Calderwood, Columbia CS/Journalism Master's → UC Santa Cruz Computational Media PhD

Media Writing

I have published several well-read articles about my research that communicate my work and thinking to a general audience. My article "AI Reveals the Most Human Parts of Writing" was mentioned in Sequoia Capital's article "AI Recruits a New Hybrid Workforce," where it structured their thinking about how to invest in AI writing assistants.

2022 **AI Reveals the Most Human Parts of Writing**, Wired
2020 **What Kinds of Sonnets Will Computers Write?** Catapult
2018 **Is It Possible for Machines to Translate Poetry?** Electric Literature

Involvement in the Arts

As a writer and poet, I've been involved in artistic and community endeavors in the traditional and computational poetry community. My poems have been published in venues such as *The HTML Review, Stirring Lit, Catapult*, and more. I have read my poems at events such at *The New York City Poetry Festival*, the *Dear Ocean Reading Series*, and MIT's *William Corbett Poetry Series*. I will publish my first book of computataional poetry with the up-and-coming press *Nothing to Say* in 2024.

Editorial Positions

2023   Founding Editor, *Ensemble Park: A Journal of Human+Computer Writing*
2022-23   Member of the Editorial Collective, *taper magazine*

Invited Talks

2023   Your Voice in the Machine, *Digital Doppelgangers*, John Hopkins University Writing Program
2023   Training Your Voice into the Machine, *If, Then: Technology and Poetics*, Monthly Workshop
2023   Writing with Artificial Intelligence, *Augsburg University*, MFA in Creative Writing Program
2021   What are Language Models and How Should We Use Them? *RISD*, Computational Poetics Class
2020   Re-Generating Text with Style, *CultureHub*, Re-Fest
2019   Words, words, words, style, words, words, words, and words, *Babycastles*, WordHack

Residencies & Fellowships

2022   Invited Four Week Writing Residency, *Vermont Studio Center*
2022-21   Resident Contributing Writer, *CultureHub*
2020   Poetry Fellow, *Brooklyn Poets*