Ian Drosos

ian.drosos@gmail.com **Personal Site** **Google Scholar**

I am a mixed methods HCI researcher who designs, implements, and evaluates novel interactions for end-users, learners, and professional programmers and data analysts

Skills

Programming

- Python
- JavaScript (React)
- Java
- R
- SQL

User Research and Design

- Figma (interaction design)
- Qualitative research (thematic analysis, interviews, content analysis, surveys, comparative tool studies, design probes)
- Quantitative analysis (Python and R)

Experience

Microsoft Research, Cambridge UK - *Researcher*   July 2022 - PRESENT

- I study how AI can help users critically think and have greater control over AI-generated explanations during data analysis and programming tasks through HCI research of end-user programming and data analysis workflows.
- Designed and implemented a React JS prototype which allows users to interact with GPT-4 to generate dynamic UI elements that helps users have greater control of LLM responses and explanations by performing prompt engineering for the user based on their needs.
- Led UX research (n=24) of a novel prototype that leverages LLMs to assist user critical thinking during data-driven-decision-making by generating 'provocations' (AI-generated critiques of AI-generated content) to help users think more broadly about data-driven sensemaking.
- Authored/co-authored seven HCI publications involving data analysis, end-user programming, and AI, including a new formula debugger in Excel (available in Excel Labs).
- Transfer research insights to product groups and leadership at Excel, VSCode Copilot, and Microsoft v-teams (Appropriate reliance of AI group, Copilot coherence group).

Autodesk Research, Remote US - *User Interface Research Intern*   January 2021 - April 2021

- Investigated barriers to providing expert (human) help to questions about feature-rich software like Autodesk Fusion 360.
- Designed, implemented, and deployed a custom survey prototype to collect feedback from experts (n=28). Paper in submission.

Microsoft, Redmond WA - *Research Intern*   July 2018 - December 2018

- As part of the PROSE team, designed, implemented, and evaluated a prototype for generating readable Python code within Jupyter notebooks using JavaScript and Python through program synthesis.
- With Wrex, data scientists are significantly more effective and efficient at data wrangling. Participants found Wrex reduced barriers in having to recall or look up data transform functions.
- Published the results from the evaluation as Wrex [1], which won Best Paper at CHI2020.

UCSD - The Design Lab, La Jolla CA - *PhD Researcher*   September 2017 - June 2022

- HCI research on user-centered learning and doing data science.

- Published six papers and won two paper awards.

- Instructor of record for HCI Portfolio Design Studio, teaching assistant for Interaction Design, HCI Programming Studio, and Data-Driven UX/Product Design.

Verizon, Alpharetta GA - *Member Technical Staff I & II, Systems Engineering*   May 2011 - July 2015

- Full-stack software engineer for internal systems that managed enterprise accounts, contracts, and purchase orders.

- Developed systems in Java, JavaScript, HTML, and PL/SQL.

- Modernized existing systems through rewrites into new frameworks.

- Debugged and resolved critical issues reported by users, including stabilizing systems during major product rollout.

- Experience of working in the complete software development life cycle involving development, documentation, testing and maintenance.

Education

University of California San Diego, La Jolla CA   2017 - 2022

PhD Cognitive Science
Thesis: Synthesizing Transparent and Inspectable Technical Workflows
HCI research on better interactions for learning and doing data science (6 publications, 2 awards).

North Carolina State University, Raleigh NC   2015 – 2017

MS Computer Science

Thesis: HappyFace: Identifying and Predicting Frustrating Learning Obstacles at Scale
HCI research on detecting frustrating programming learning obstacles (1 publication).

Southern Polytechnic State University*, Marietta GA   2007 – 2011

BS Computer Science
*Now Kennesaw State University

Selected publications and awards

[1] Wrex: A Unified Programming-By-Example Interaction for Synthesizing Readable Code for Data Scientists. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI 2020). ***Best Paper Award***
[2] FxD: a functional debugger for dysfunctional spreadsheets. In Proceedings of the Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2023). (Patent filed). ***Best Paper Honorable Mention Award***
[3] "It's like a rubber duck that talks back": Understanding Generative AI-Assisted Data Analysis Workflows through a Participatory Prompting Study. In Proceedings of the Symposium on Human-Computer Interaction for Work. (CHIWORK 2024).
[4] Game Design Copilot - "2nd place company-wide 'Change the Game' Executive Challenge Hackathon, chosen by Microsoft Gaming CEO and Head of XBOX Phil Spencer. "People's Choice Runner Up (MSRC)" and "Teamwork Makes the Dream Work (MSRC)" Awards.

See my personal site for a full CV of publications, projects, and awards.