Ian Drosos

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I am a product engineer and mixed-methods Human-Computer Interaction researcher who designs, implements, and evaluates novel AI tools and interactions for knowledge workers.

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)

Selected Work Experience

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

- HCI research on how AI can help users critically think, and on the design and implementation of interfaces that provide greater control over AI responses during knowledge workflows.
- Designed, implemented, and evaluated (n=16) a React JS system that leverages GPT-4o to generate a dynamic UI containing prompt refinements which provides users greater control of AI responses by performing prompt engineering for the user based on their context.
- Led UX research (n=24) of a novel prototype that leverages LLMs to assist user critical thinking during data-driven-decision-making by generating AI 'provocations' that help users think more broadly about their data-driven tasks.
- Authored/co-authored 12 HCI publications and 4 patents involving data analysis, end-user programming, and AI, including a new formula debugger in Excel (available in Excel Labs).
- Transfer research insights to leadership at product groups within Microsoft, including: MS Copilot, Excel, PowerPoint, Word, Outlook, Teams, and VSCode.

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

- Designed, implemented, and evaluated (n=12) a prototype called Wrex for generating readable Python code through program synthesis within Jupyter notebooks using JavaScript and Python.
- With Wrex, data scientists were significantly more effective and efficient at data wrangling, who found it reduced barriers in having to recall or look up data transform functions.
- Published the results from the evaluation at CHI2020, which won Best Paper.

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

- HCI research on user-centered learning and doing data science.
- Published 6 papers and won 2 paper awards.
- Instructor of record for HCI Portfolio Design Studio, and teaching assistant for Interaction Design, HCI Programming Studio, and Data-Driven UX/Product Design.

Verizon, Alpharetta GA - *Member Technical Staff I & II System 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

[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] "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).
[3] Dynamic Prompt Middleware: Contextual Prompt Refinement Controls for Comprehension Tasks. In Proceedings of the Symposium on Human-Computer Interaction for Work. (CHIWORK 2025).
See my CV for a full list of publications.