Ian Drosos

Researcher
Microsoft Research
Cambridge, UK

Updated: August 12, 2023
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Research Interests

human-computer interaction; designing and implementing tools to support and enhance the workflows of developers, data scientists, learners, and content creators.

Education

University of California, San Diego
Ph.D. in Cognitive Science — 2017 – 2022
Thesis: *Synthesizing Transparent and Inspectable Technical Workflows* Advisor: Philip Guo

North Carolina State University
M.S. in Computer Science — 2015 – 2017
Thesis: *HappyFace: Identifying and Predicting Frustrating Learning Obstacles at Scale*, Advisor: Chris Parnin

Southern Polytechnic State University
B.S. in Computer Science — 2007 – 2011

Experience

Microsoft Research, Cambridge, UK
Researcher — 2022 –
HCI research in bringing intelligence to end-user programming and data workflows. Partnered with product teams at Excel to provide design and UX insights as part of transferring research findings to product managers and designers which includes several design jams and feature proposals. [C.8, 9, x; W.1]

UCSD – The Design Lab, La Jolla, CA
Researcher – Ph.D. Candidate — 2017 – 2022
HCI research in providing better experiences for developers, data scientists, learners, and content creators. [C.2-7]

UCSD, La Jolla, CA
Instructor — 2018 – 2022
HCI Portfolio Design Studio (COGS121)
- Quarter: Spring 2022

Teaching Assistant
Interaction Design (COGS120/CSE170)
- Quarters: Winter 2018, 2019
- Instructor: Scott Klemmer

Human-Computer Interaction Programming Studio (COGS121)
- Spring 2018, 2019
- Instructor: Philip Guo

HCI Portfolio Design Studio (COGS121)
- Quarters: Spring 2020, 2021
- Instructor: Philip Guo

Data-Driven UX/Product Design (COGS127)
- Quarter: Winter 2022
- Instructor: Sean Kross

Autodesk, San Rafael, CA
Intern – User Interface Research 01/2021 – 04/2021
Researching, prototyping, and studying software learning with the HCI and Visualization team at Autodesk Research.

Microsoft, Redmond, WA
Research Intern – Program Synthesis 07/2018 – 12/2018
Researching, prototyping, and studying program synthesis interactions for data scientists on the PROSE team (microsoft.github.io/prose). [C.4]

Verizon, Alpharetta, GA
Member Technical Staff I & II – Systems Engineering 2011 – 2015
Full-stack software engineer developing enterprise systems using Java, PL/SQL, JavaScript, and HTML.

Publications

C.x **Ian Drosos**, Advait Sarkar, and Andrew D. Gordon. 2023. "My toxic trait is thinking I'll remember this": Gaps in the learner experience of video tutorials for feature-rich software. (In submission).

W.1 Advait Sarkar, **Ian Drosos**, Rob DeLine, Andrew D. Gordon, Carina Negreanu, Sean Rintel, Jack Williams, and Ben Zorn. 2023. Participatory prompting: a user-centric research method for eliciting AI assistance opportunities in knowledge workflows. Proceedings of the 34th Annual Conference of the Psychology of Programming Interest Group (PPIG 2023).

C.9 **Ian Drosos**, Nick Wilson, Sruti Ragavan, Jack Williams, and Andrew D. Gordon. 2023. FxD: a functional debugger for dysfunctional spreadsheets. In Proceedings of the Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2023). (Patent filing in progress).

C.8 Kasra Ferdowsi, Jack Williams, **Ian Drosos**, Andrew D. Gordon, Carina Negreanu, Advait Sarkar, Benjamin Zorn. 2023. ColDeco: An End User Spreadsheet Inspection Tool for AI-Generated Code. In Proceedings of the Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2023). (Patent filing in progress).

C.7 **Ian Drosos** and Philip Guo. 2022. The Design Space of Livestreaming Equipment Setups: Tradeoffs, Challenges, and Opportunities. In Designing Interactive Systems Conference 2022 (DIS 2022). [Link]

C.6 **Ian Drosos** and Philip Guo. 2021. Streamers Teaching Programming, Art, and Gaming: Cognitive Apprenticeship, Serendipitous Teachable Moments, and Tacit Expert Knowledge. In Proceedings of the Symposium on Visual Languages and Human-Centric Computing, short paper (VL/HCC 2021). [Link] ***Honorable Mention Paper Award***

C.5 Sam Lau, **Ian Drosos**, Julia Markel and Philip Guo. 2020. The Design Space of Computational Notebooks: An Analysis of 60 Systems in Academia and Industry. In Proceedings of the Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2020). [Link]

C.4 **Ian Drosos**, Titus Barik, Philip Guo, Robert DeLine, and Sumit Gulwani. 2020. 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). [Link]
Best Paper Award (Top 1%)

C.3 Adam Rule, **Ian Drosos**, Aurélien Tabard, and James D. Hollan. 2018. Aiding Collaborative Reuse of Computational Notebooks with Annotated Cell Folding. In Proceedings of the ACM Conference on Computer-Supported Cooperative Work and Social Computing. ACM, Article 150 (CSCW 2018). [Link]

C.2 René Just, Chris Parnin, **Ian Drosos**, and Michael D. Ernst. 2018. Comparing developer-provided to user-provided tests for fault localization and automated program repair. In Proceedings of the 27th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2018). [Link]

C.1 **Ian Drosos**, Philip Guo, and Chris Parnin. 2017. HappyFace: Identifying and Predicting Frustrating Obstacles for Learning Programming at Scale. In Proceedings of the Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2017). [Link]

Tools

Figma, DaVinci Resolve

Programming Languages

Python, JavaScript, HTML, Java, R, LaTeX

Service

Program Committee, L@S 2023, VL/HCC 2023
Reviewer, UIST 2020, VL/HCC 2021, CHI 2022, CHI 2023