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Benjamin Xie

Ph.D. Candidate

Research Interests: I am a human-computer interaction (HCI) researcher who designs interactive tools to support equity in computing education. I engage with the fields of HCI, computing education, artificial intelligence in education, and psychometrics.

Education

2016 -	**University of Washington**, Seattle, WA Ph.D. in Information Science Advisor: Amy J. Ko
2015-2016	**Massachusetts Institute of Technology**, Cambridge, MA M.Eng. in Computer Science Thesis: *Progression of Computational Thinking Skills Demonstrated by App Inventor Users* Advisor: Hal Abelson
2011-2015	**Massachusetts Institute of Technology**, Cambridge, MA B.S. in Computer Science Advisor: Hal Abelson

Work Experience

2016-	**University of Washington**, Research Assistant, Code & Cognition Lab
2014-2016	**Massachusetts Institute of Technology**, Research Assistant, MIT App Inventor
2015	**NovoEd**, Software Engineering Intern
2014	**AppNexus**, Software Engineering Intern, API Team
2013	**eBay**, Software Engineering Intern, Marketplace Team
2012-2013	**Massachusetts Institute of Technology**, Research Assistant, MIT Education Arcade

Awards

2016-2021	National Science Foundation (NSF) Graduate Research Fellowship
2019	Society for Collegiate Leadership & Achievement Nomination
2017	Golden Key Honour Society Nomination
2014-2015	MIT EECS - Google Research and Innovation Scholar
2013-2016	USTFCCCA All-Academic Honoree in Cross Country, Track

Publications

Dastyni Loksa, **Benjamin Xie**, Harrison Kwik, and Amy J. Ko. "Investigating Novices' In Situ Reflections on Their Programming Process." In Proceedings of the ACM Technical Symposium on Computer Science Education (SIGCSE), Research Track. ACM, 2020.

Greg L. Nelson, **Benjamin Xie**, Andrew Hu, and Amy J. Ko. "Towards a Validated Formative Assessment for Language-Specific Program Tracing Skills." In Koli Calling, 2019.

Benjamin Xie, Erik Harpstead, Betsy DiSalvo, Petr Slovak, Ahmed Kharrufa, Michael J. Lee, Viktoria Pammer-Schindler, Amy Ogan, and Joseph Jay Williams. "Learning, Education, and HCI." In Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems. CHI EA '19. ACM, 2019.

Benjamin Xie, Matthew J. Davidson, Min Li, and Amy J. Ko. "An Item Response Theory Evaluation of a Language-Independent CS1 Knowledge Assessment." In Proceedings of the 50th ACM Technical Symposium on Computer Science Education, 699–705. SIGCSE '19. ACM, 2019.

Benjamin Xie, Dastyni Loksa, Greg L. Nelson, Matthew J. Davidson, Dongsheng Dong, Harrison Kwik, Alex Hui Tan, Leanne Hwa, Min Li, and Amy J. Ko. "A Theory of Instruction for Introductory Programming Skills." Computer Science Education, January 25, 2019, 1–49.

Harrison Kwik, **Benjamin Xie**, and Amy J. Ko. "Experiences of Computer Science Transfer Students." In Proceedings of the 2018 ACM Conference on International Computing Education Research, 115–23. ICER '18. ACM Press, 2018.

Benjamin Xie, Greg L. Nelson, and Amy J. Ko. "An Explicit Strategy to Scaffold Novice Program Tracing." In 2018 ACM SIGCSE Technical Symposium on Computer Science Education. SIGCSE '18. New York, NY, USA: ACM, 2018.

Greg L. Nelson, **Benjamin Xie**, and Amy J. Ko. "Comprehension First: Evaluating a Novel Pedagogy and Tutoring System for Program Tracing in CS1." In Proceedings of the 2017 ACM Conference on International Computing Education Research, 2–11. ICER '17. New York, NY, USA: ACM, 2017.

Benjamin Xie, and Hal Abelson. "Skill Progression in MIT App Inventor." In 2016 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), 213–17, 2016.

Benjamin Xie, Isra Shabir, and Hal Abelson. "Measuring the Usability and Capability of App Inventor to Create Mobile Applications." In Proceedings of the 3rd International Workshop on Programming for Mobile and Touch, 1–8. PROMOTO 2015. New York, NY, USA: ACM, 2015.

TEACHING

INSTRUCTOR	UW INFO 370: Introduction to Data Science (Fa '17)
TEACHING ASSISTANT	UW INFO 201: Technical Foundations of Informatics (Fa '19) UW INFO 461: Cooperative Software Design (Sp '17) Prospect Hill Academy Intro to Computer Science (Fa '14, Sp '15)

SERVICE

REVIEWER	CHI (2018, 2020), UIST (2019), TOCE (2019), SIGCSE (2018-2019), Journal of Information an Learning Sciences (2018)
PROGRAM COMMITTEE	EECScon: MIT EECS Undergrad Research Conference (2014, 2015)
STUDENT CO-ORDINATOR	UW DUB Seminars (2019), UW DUB Doctoral Consortium (2019), UW DUB PhD Student Retreat (2018), UW Information School PhD Retreat (2018)
MENTOR	Technology Access Foundation (TAF) Academy STEM Expo (2016-2019) Google Summer of Code (on behalf of MIT Media Lab, 2016)
EDUCATIONAL COUNSELOR	Massachusetts Institute of Technology (2016-2019)

RELEVANT GRADUATE COURSEWORK

UW (3.9/4.0)	CSE 507 (Computer-Aided Reasoning for Software Engineering), EDPSY 515 (Current Issues in Technology & Education), EDPSY 584 (Computerized Adaptive Testing), EDPSY 592 (Advanced Educational Measurements), EDPSY 595 (Item Response Theory), INFO 543 (Value-Sensitive Design), INFO 570 (Research Design), INFO 571 (Qualitative Methods), INSC 598 (Computer-Supported Collaborative Learning)
MIT (4.7/5.0)	6.833 (Human Intelligence Enterprise), 6.436 (Fundamentals of Probability), 6.857 (Network & Computer Security), 6.865 (Adv. Computational Photography), 6.867 (Machine Learning)