

Michael Xieyang Liu

PH.D STUDENT · HCI RESEARCHER

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Research Interests

Human-Computer Interaction, Sensemaking, Programming Support Tools, End-user Programming, Intelligent User Interfaces

Education

Ph.D. in Human-Computer Interaction (*in progress*)

Aug. 2017 - Present

CARNEGIE MELLON UNIVERSITY, HUMAN-COMPUTER INTERACTION INSTITUTE (HCII),
SCHOOL OF COMPUTER SCIENCE (SCS)

Pittsburgh, PA, USA

• Advisor: Dr. Brad A. Myers & Dr. Aniket Kittur

B.S. in Computer Science

Sept. 2015 - Apr. 2017

UNIVERSITY OF MICHIGAN, DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER
SCIENCE

Ann Arbor, MI, USA

B.S.E. in Electrical and Computer Engineering

Sept. 2013 - Aug. 2017

UNIVERSITY OF MICHIGAN – SHANGHAI JIAO TONG UNIVERSITY JOINT INSTITUTE


Shanghai, China

• Advisor: Dr. Jing Liu

Publications

PEER-REVIEWED CONFERENCE PAPERS

- [C.7] **Lowering the Cost for Developers to Collect and Organize Information for Decision Making.**
Michael Xieyang Liu, Aniket Kittur, Brad A. Myers.
Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022) (To appear).
- [C.6] **Understanding How Programmers Can Use Annotations on Documentation.**
Amber Horvath, **Michael Xieyang Liu**, River Hendriksen, Connor Shannon, Emma Paterson, Kazi Jawad, Andrew Macvean, Brad A. Myers.
Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022) (To appear).
- [C.5] 🏆 **To Reuse or Not To Reuse? A Framework and System for Evaluating Summarized Knowledge.**
Michael Xieyang Liu, Aniket Kittur, Brad A. Myers.
Proceedings of the ACM on Human-Computer Interaction. 5, CSCW1, Article 166 (April 2021) (CSCW 2021).
Best Paper Award
- [C.4] **Tabs.do: Task-Centric Browser Tab Management.**
Joseph Chee Chang, Yongsung Kim, Victor Miller, **Michael Xieyang Liu**, Brad A. Myers, Aniket Kittur.
Proceedings of the 34th Annual ACM Symposium on User Interface Software and Technology (UIST 2021).

- Unakite: Scaffolding Developers' Decision-Making Using the Web.**
Michael Xieyang Liu, Jane Hsieh, Nathan Hahn, Angelina Zhou, Emily Deng, Shaun Burley, Cynthia Taylor, Aniket Kittur, Brad A. Myers.
 [C.3]  *Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology (UIST 2019).*
Best Paper Honorable Mention Award
- Popup: Reconstructing 3D Video Using Particle Filtering to Aggregate Crowd Responses.**
 Jean Y. Song, Stephan J. Lemmer, **Michael Xieyang Liu**, Shiyang Yan, Juho Kim, Jason J. Corso, Walter S. Lasecki.
 [C.2] *Proceedings of the 24th Annual ACM International Conference on Intelligent User Interfaces (IUI 2019).*
- Learning to Detect Human-Object Interactions.**
 Yu-Wei Chao, Yunfan Liu, **Xieyang Liu**, Huayi Zeng, Jia Deng.
 [C.1] *2018 IEEE Winter Conference on Applications of Computer Vision (WACV 2018).*
- POSTERS**
- An Exploratory Study of Web Foraging to Understand and Support Programming Decisions.**
 [P.1] Jane Hsieh, **Michael Xieyang Liu**, Brad A. Myers, Aniket Kittur.
IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2018).
- WORKSHOP PAPERS**
- UNAKITE: Support Developers for Capturing and Persisting Design Rationales When Solving Problems Using Web Resources.**
 [W.2] **Michael Xieyang Liu**, Nathan Hahn, Angelina Zhou, Shaun Burley, Emily Deng, Aniket Kittur, Brad A. Myers.
DTSHPS'18 Workshop on Designing Technologies to Support Human Problem Solving, IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2018).
- Supporting Knowledge Acceleration for Programming from a Sensemaking Perspective.**
 [W.1] **Michael Xieyang Liu**, Shaun Burley, Emily Deng, Angelina Zhou, Aniket Kittur, Brad A. Myers.
Sensemaking Workshop @ CHI Conference on Human Factors in Computing Systems (CHI 2018).

Professional Experience

- UX Research Intern** with Dustin Smith, Todd Kulesza, and Sarah D'Angelo May. - Aug. 2020
 GOOGLE Seattle, WA, USA
 • Conducted qualitative research on Go developers' refactoring practices and their engagement with refactoring tools.
- Research Intern** (with Lisa Yu, Wan-Yi Lin, and Alessandro Oltramari) May. - Aug. 2019
 RESEARCH AND TECHNOLOGY CENTER, BOSCH RESEARCH Pittsburgh, PA, USA
 • Worked on crowd & AI-powered projects that aim to improve the safety and performance of autonomous vehicles.

Research Experience

- Graduate Research Assistant** (advised by Brad A. Myers & Aniket Kittur) Aug. 2017 - Present
 HUMAN-COMPUTER INTERACTION INSTITUTE, CARNEGIE MELLON UNIVERSITY Pittsburgh, PA, USA
 • Working on UNAKITE, a system that scaffolds developers in making decisions using information from various web sources and embedding their decision-making structures into their code.

Research Assistant (with Jodi Forlizzi, Roni Rosenfeld & Ryan Tibshirani)

April. 2020 - Present

DELPHI RESEARCH GROUP, CARNEGIE MELLON UNIVERSITY

Pittsburgh, PA, USA

- Working on the visualization team of the COVIDcast system (<https://covidcast.cmu.edu/>), which displays indicators related to COVID-19 activity level across the U.S. These indicators are derived from a variety of anonymized, aggregated data sources made available by multiple partners, including Facebook, Google, and Quidel. [Press coverage]

Undergraduate Researcher

Mar. 2016 - May. 2017

CROWDS AND MACHINES LAB, UNIVERSITY OF MICHIGAN

Ann Arbor, MI, USA

- Worked on crowd & AI-powered interdisciplinary projects that address novel and promising research questions.

Research Assistant (advised by Jia Deng)

Sept. 2015 - Apr. 2016

VISION & LEARNING LAB, UNIVERSITY OF MICHIGAN

Ann Arbor, MI, USA

- Worked on a computer vision based toolkit that boosts performance on human-object interaction detection by exploiting human-object spatial relations.

Teaching Experience

Teaching Assistant – 05-410/05-610 User-Centered Research & Evaluation

Fall 2020

HUMAN-COMPUTER INTERACTION INSTITUTE, CARNEGIE MELLON UNIVERSITY

Teaching Assistant – 05-431/05-631 Software Structures for User Interfaces

Fall 2020

HUMAN-COMPUTER INTERACTION INSTITUTE, CARNEGIE MELLON UNIVERSITY

Teaching Assistant – 05-430/05-630 Programming Usable Interfaces

Fall 2019

HUMAN-COMPUTER INTERACTION INSTITUTE, CARNEGIE MELLON UNIVERSITY

Instructional Aide – EECS484 Database Management Systems

Winter 2017

UNIVERSITY OF MICHIGAN, ANN ARBOR

Instructional Aide – EECS484 Database Management Systems

Fall 2016

UNIVERSITY OF MICHIGAN, ANN ARBOR

Teaching Assistant – Vv255 Multivariate Calculus

Summer 2015

UNIVERSITY OF MICHIGAN – SHANGHAI JIAO TONG UNIVERSITY JOINT INSTITUTE

Students Mentored

Jane Hsieh

Summer 2018 – Spring 2019

OBERLIN COLLEGE UNDERGRADUATE STUDENT

- Worked on studying programmers' web-foraging behaviors. Contributed to the development of the UNAKITE system.

Emily Deng

Fall 2017

CMU MASTER'S STUDENT

- Worked on designing and carrying out interview studies with programmers that probe their programming behaviors and needs.

Shaun Burley

Fall 2017

CMU MASTER'S STUDENT

- Worked on designing and carrying out interview studies with programmers that probe their programming behaviors and needs.

Selected Honors, Grants, Awards & Coverage

Best Paper Award, 24th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2021)

Oct. 2021

CMU News Coverage on COVIDcast: “Carnegie Mellon Unveils Five Interactive COVID-19 Maps”	<i>Apr. 2020</i>
Best Paper Honorable Mention Award , 32nd Annual ACM Symposium on User Interface Software and Technology (UIST 2019)	<i>Oct. 2019</i>
SHF: Small: Knowledge Acceleration for Programming (\$500,000 over three years) , NSF	<i>Jun. 2018</i>
James B. Angell Scholar , 94th Annual Honors Convocation, University of Michigan	<i>Mar. 2017</i>
EECS Scholar Award , 2017 EECS Honors & Awards Reception, University of Michigan	<i>Mar. 2017</i>
2016 Summer Undergraduate Research Experience (SURE) program , University of Michigan	<i>May. 2016</i>
Tang-Junyuan Fellowship (Top 2/250, \$50,000) , UM-SJTU Joint Institute	<i>Jul. 2015, Jul. 2016</i>
Dean’s List , University of Michigan	<i>Dec. 2015, Apr. 2016</i>
Basic Teaching Assistant Certificate , Center for Learning and Teaching, UM-SJTU Joint Institute	<i>Aug. 2015</i>
Dean’s List , UM-SJTU Joint Institute	<i>Dec. 2013, Aug. 2014, Dec. 2014, Aug. 2015</i>
Fellowship for Outstanding Academic Performance , Shanghai Jiao Tong University	<i>Jun. 2015</i>
Meritorious Winner (Acceptance: 9%) , COMAP Mathematical Contest in Modeling	<i>Apr. 2015</i>

Professional Service

ACADEMIC SERVICE

Associate Chair	ACM CHI 2020 Late Breaking Work Track
Paper Reviewing	Conferences: CHI (2019, 2020, 2021, 2022), CSCW (2019, 2020, 2021, 2022), UIST (2019, 2020, 2021), VAST (2020)

DEPARTMENTAL AND COMMUNITY SERVICE

Committee Member	CMU HCII Faculty Lunch Organization Committee (2019-2020)
Committee Member	CMU HCII Ph.D. Student Lounge Committee (2019-2020)

Languages & Technical Skills & Courses

Languages	English - Native or bilingual proficiency, Chinese (Mandarin) - Native or bilingual proficiency, German - Limited working proficiency
Programming	HTML/Javascript/CSS, Python, SQL, C/C++, Swift, Java, LaTeX, etc.
Web & App Development	React, Angular, Redux, Bootstrap, Node.JS, PHP, Ionic, etc.
Deep Learning & AI	Pytorch, Tensorflow, ml5.js
Courses	Machine Learning, Deep Learning, Database Management Systems, Information Security, Web Development, Advanced User Interfaces