

Michael Xieyang Liu

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EDUCATION

- Ph.D. in Human-Computer Interaction** (*in progress*) 2017 - present
Carnegie Mellon University, Pittsburgh, PA, USA
Thesis: Scaffolding Knowledge Capturing, Structuring, and Reuse during Online Sensemaking
Advisors: Brad A. Myers, Aniket Kittur
Committee: Kenneth Holstein (CMU HCII), Daniel M. Russell (Google, Inc.)
- M.S. in Human-Computer Interaction** 2017 - 2021
Carnegie Mellon University, Pittsburgh, PA, USA
- B.S. in Computer Science** 2013 - 2017
University of Michigan, Ann Arbor, MI, USA
- B.S.E. in Electrical and Computer Engineering** 2013 - 2017
University of Michigan–Shanghai Jiao Tong University Joint Institute, Shanghai, China

PUBLICATIONS

Peer-reviewed Conference Papers

- P.9 **Michael Xieyang Liu**, Andrew Kuznetsov, Yongsung Kim, Joseph Chee Chang, Aniket Kittur, Brad A. Myers. **Wigglite: Low-cost Information Collection and Triage**. *Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology (UIST 2022)*.
- P.8 Franklin Mingzhe Li, **Michael Xieyang Liu**, Yang Zhang, Patrick Carrington. **Freedom to Choose: Understanding Input Modality Preferences of People with Upper-body Motor Impairments for Activities of Daily Living**. *Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2022)*.
- P.7 **Michael Xieyang Liu**, Aniket Kittur, Brad A. Myers. **Crystalline: Lowering the Cost for Developers to Collect and Organize Information for Decision Making**. *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022)*.
- P.6 Amber Horvath, **Michael Xieyang Liu**, River Hendriksen, Connor Shannon, Emma Paterson, Kazi Jawad, Andrew Macvean, Brad A. Myers. **Understanding How Programmers Can Use Annotations on Documentation**. *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022)*.
- P.5 **Michael Xieyang Liu**, Aniket Kittur, Brad A. Myers. **To Reuse or Not To Reuse? A Framework and System for Evaluating Summarized Knowledge**. *Proceedings of the ACM on Human-Computer Interaction*, 5, CSCW1, Article 166 (April 2021) (CSCW 2021). 🏆 **Best Paper Award** and **CMU SCS News Coverage**

- P.4 Joseph Chee Chang, Yongsung Kim, Victor Miller, **Michael Xieyang Liu**, Brad A. Myers, Aniket Kittur. **Tabs.do: Task-Centric Browser Tab Management**. *Proceedings of the 34th Annual ACM Symposium on User Interface Software and Technology (UIST 2021)*.
- P.3 **Michael Xieyang Liu**, Jane Hsieh, Nathan Hahn, Angelina Zhou, Emily Deng, Shaun Burley, Cynthia Taylor, Aniket Kittur, Brad A. Myers. **Unakite: Scaffolding Developers' Decision-Making Using the Web**. *Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology (UIST 2019)*.
 **Best Paper Honorable Mention Award**
- P.2 Jean Y. Song, Stephan J. Lemmer, **Michael Xieyang Liu**, Shiyan Yan, Juho Kim, Jason J. Corso, Walter S. Lasecki. **Popup: Reconstructing 3D Video Using Particle Filtering to Aggregate Crowd Responses**. *Proceedings of the 24th Annual ACM International Conference on Intelligent User Interfaces (IUI 2019)*.
- P.1 Yu-Wei Chao, Yunfan Liu, **Xieyang Liu**, Huayi Zeng, Jia Deng. **Learning to Detect Human-Object Interactions**. *2018 IEEE Winter Conference on Applications of Computer Vision (WACV 2018)*.

Workshop Papers & Posters

- W.3 Jane Hsieh, **Michael Xieyang Liu**, Brad A. Myers, Aniket Kittur. **An Exploratory Study of Web Foraging to Understand and Support Programming Decisions**. *IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2018)*.
- W.2 **Michael Xieyang Liu**, Nathan Hahn, Angelina Zhou, Shaun Burley, Emily Deng, Aniket Kittur, Brad A. Myers. **UNAKITE: Support Developers for Capturing and Persisting Design Rationales When Solving Problems Using Web Resources**. *DTSHPS'18 Workshop on Designing Technologies to Support Human Problem Solving, IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2018)*.
- W.1 **Michael Xieyang Liu**, Shaun Burley, Emily Deng, Angelina Zhou, Aniket Kittur, Brad A. Myers. **Supporting Knowledge Acceleration for Programming from a Sensemaking Perspective**. *Sensemaking Workshop @ CHI Conference on Human Factors in Computing Systems (CHI 2018)*.

Patent

- PT.2 Ben Zorn, Carina Negreanu, Advait Sarkar, Andrew Gordon, Jack Williams, **Michael Xieyang Liu**, Neil Toronto, Sruti Srinivasa Ragavan. **Generation of Interactive Utterances of Code Tasks**. *US Patent (submitted), 2022*
- PT.1 Aniket Kittur, Brad A. Myers, **Michael Xieyang Liu**. **Multidirectional Gesturing for OnDisplay Item Identification and/or Further Action Control**. *US Patent PCT/US2022/043604 (submitted), 2022*

PROFESSIONAL EXPERIENCE

- Microsoft Research**, Research Intern May - Aug. 2022
 with Advait Sarkar, Carina Negreanu, Jack Williams, Andy Gordon, Ben Zorn
 Designed, built, and evaluated natural language interactions for end-user programmers.
- Google**, Research Intern May - Aug. 2020
 with Dustin Smith, Todd Kulesza, and Sarah D'Angelo
 Conducted qualitative research on Go developers' refactoring practices and engagement with refactoring tools.
- Bosch Research**, Research Intern May - Aug. 2019
 with Lisa Yu, Wan-Yi Lin, and Alessandro Oltramari
 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) <i>Human-Computer Interaction Institute, Carnegie Mellon University</i> Working on prototype systems that scaffold developers in making decisions using information from various web sources and enable subsequent developers to learn, understand, and reuse those decisions and rationales.	2017 - present
Research Assistant (with Jodi Forlizzi, Roni Rosenfeld & Ryan Tibshirani) <i>Delphi Research Group, Carnegie Mellon University</i> Working on the visualization team of the COVIDcast system , 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]	2020 - 2021
Undergraduate Researcher <i>Crowds and Machines Lab, University of Michigan, Ann Arbor</i> Worked on crowd & AI-powered interdisciplinary projects that address novel and promising research questions.	2016 - 2017
Research Assistant (advised by Jia Deng) <i>Vision & Learning Lab, University of Michigan, Ann Arbor</i> Worked on a computer vision based toolkit that boosts performance on human-object interaction detection by exploiting human-object spatial relations.	2015 - 2016

SELECTED HONORS, GRANTS, AWARDS & COVERAGE

CMU SCS News Coverage on our CSCW 2021 Best Paper: “CMU Researchers Develop Tool To Help Determine When To Reuse Content”	Nov. 2021
Best Paper Award , 24th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2021)	Oct. 2021
Special Recognitions for Outstanding Reviews , 34th Annual ACM Symposium on User Interface Software and Technology (UIST 2021)	June 2021
CMU News Coverage on COVIDcast: “Carnegie Mellon Unveils Five Interactive COVID-19 Maps”	April 2020
Best Paper Honorable Mention Award , 32nd Annual ACM Symposium on User Interface Software and Technology (UIST 2019)	Oct. 2019
SHF: Small: Knowledge Acceleration for Programming (\$500,000 over 3 years) , NSF	June 2018
James B. Angell Scholar , 94th Annual Honors Convocation, University of Michigan	March 2017
EECS Scholar Award , 2017 EECS Honors & Awards Reception, University of Michigan	March 2017
Summer Undergraduate Research Experience (SURE) program , University of Michigan	May 2016
Tang-Junyuan Fellowship (Top 2/250, \$50,000) , UM-SJTU Joint Institute	July 2015, July 2016
Dean’s List , University of Michigan	Dec. 2015, April 2016
Basic Teaching Assistant Certificate , Center for Learning and Teaching, UM-SJTU Joint Institute	Aug. 2015
Dean’s List , UM-SJTU Joint Institute	Dec. 2013, Aug. 2014, Dec. 2014, Aug. 2015
Fellowship for Outstanding Academic Performance , Shanghai Jiao Tong University	June 2015
Meritorious Winner (Acceptance: 9%) , COMAP Mathematical Contest in Modeling	April 2015

MENTORING

- Jane Hsieh** 2018 - 2019
Oberlin College Student (Currently a CMU S3D PhD. Candidate)
Studied programmers' web-foraging behaviors. Contributed to the development of the Unakite system.
- Emily Deng** 2017 - 2018
CMU Master's Student
Designed and carried out interview studies with programmers that probe their programming behaviors and needs.
- Shaun Burley** 2017 - 2018
CMU Master's Student
Designed and carried out interview studies with programmers that probe their programming behaviors and needs.

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

SERVICE

Academic Service

- Associate Chair** ACM CHI 2020 Late Breaking Work Track
Conferences: CHI (2019, 2020, 2021, 2022, 2023), CSCW (2019, 2020, 2021, 2022), UIST (2019, 2020, 2021, 2022), IUI (2020), VAST (2020)
- Paper Reviewing** **Journal:** TOCHI (2022)
🏆 *Special Recognitions for Outstanding Reviews: UIST*

Departmental & Community Service

- Committee Member** REU (Research Experience for Undergraduate) Admissions Committee (2021-2022)
- 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, 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.js, Angular, Redux, Bootstrap, Node.js, PHP, Ionic Framework, etc.
Deep Learning & AI	PyTorch, Tensorflow, ml5.js
Courses	Machine Learning, Deep Learning, Advanced User Interfaces, Database Management Systems, Information Security, Web Development