

Michael Xieyang Liu

PH.D STUDENT · HCI RESEARCHER

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Research Interests

Human-Computer Interaction, Programming Support Tools, Sensemaking, 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),

Pittsburgh, PA, USA

SCHOOL OF COMPUTER SCIENCE (SCS)

• Advisor: Brad A. Myers & Aniket Kittur

B.S. in Computer Science

Sept. 2015 - Apr. 2017

UNIVERSITY OF MICHIGAN, DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER

Ann Arbor, MI, USA

SCIENCE

• Advisor: Walter S. Lasecki

B.S.E. in Electrical and Computer Engineering

Sept. 2013 - Aug. 2017

UNIVERSITY OF MICHIGAN – SHANGHAI JIAO TONG UNIVERSITY JOINT INSTITUTE

Shanghai, China

• Advisor: Jing Liu

Publications

PEER-REVIEWED CONFERENCE PAPERS

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.
2018 IEEE Winter Conference on Applications of Computer Vision (WACV 2018).

[C.1]

POSTERS

- [P.1] **An Exploratory Study of Web Foraging to Understand and Support Programming Decisions.**
Jane Hsieh, **Michael Xieyang Liu**, Brad A. Myers, Aniket Kittur.
IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2018).

WORKSHOP PAPERS

- [W.2] **UNAKITE: Support Developers for Capturing and Persisting Design Rationales When Solving Problems Using Web Resources.**
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).
- [W.1] **Supporting Knowledge Acceleration for Programming from a Sensemaking Perspective.**
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).

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. [\[Press coverage\]](#)
- Research Intern** (with Lisa Yu, Wan-Yi Lin, & 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.
- Undergraduate Researcher** (advised by Walter S. Lasecki) *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 – 05430/05630 Programming Usable Interfaces** *Fall 2019*
HUMAN-COMPUTER INTERACTION INSTITUTE, CARNEGIE MELLON UNIVERSITY *Pittsburgh, PA, USA*
- Instructional Aide – EECS484 Database Management Systems** *Winter 2017*
UNIVERSITY OF MICHIGAN *Ann Arbor, MI, USA*
- Instructional Aide – EECS484 Database Management Systems** *Fall 2016*
UNIVERSITY OF MICHIGAN *Ann Arbor, MI, USA*

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

CMU News Coverage on COVIDcast: "Carnegie Mellon Unveils Five Interactive COVID-19 Maps"

Apr. 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 three years), NSF

Jun. 2018

James B. Angell Scholar, 94th Annual Honors Convocation, University of Michigan

Mar. 2017

EECS Scholar Award, 2017 EECS Honors & Awards Reception, University of Michigan

Mar. 2017

2016 Summer Undergraduate Research Experience (SURE) program, University of Michigan

May. 2016

Tang-Junyuan Fellowship (Top 2/250, \$50,000), UM-SJTU Joint Institute

Jul. 2015, Jul. 2016

Dean's List, University of Michigan

Dec. 2015, Apr. 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

Jun. 2015

Meritorious Winner (Acceptance: 9%), COMAP Mathematical Contest in Modeling

Apr. 2015

Professional Service

ACADEMIC SERVICE

Associate Chair ACM CHI 2020 Late Breaking Work Track

Paper Reviewing Conferences: **CHI** (2019, 2020), **CSCW** (2019, 2020), **UIST** (2019)

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

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| 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 |