

# Michael Xieyang Liu

PH.D STUDENT · HCI RESEARCHER

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## Research Interests

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

## Education

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### 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: Brad A. Myers & 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*

- 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

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### 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

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- 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

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- 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

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### 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

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**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

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### ACADEMIC SERVICE

**Associate Chair** ACM CHI 2020 Late Breaking Work Track

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

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