

Contact Information

Yuxi Chen

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Work Experience

02/2020-present Meta (Facebook), Inc., Research Scientist

Explore tools for external researchers to access data from Meta safely and securely

03/2020-06/2020

Project: URL Sanitization

- Release safe and secure URL data publicly, avoid leaking any sensitive data from the parameters
- As the main member, help the pipeline and implement sensitive-data-protection library

06/2020-12/2020

Project: US2020

- Provide independent, credible research about the role of social media in US2020 election
<https://about.fb.com/news/2020/08/research-impact-of-facebook-and-instagram-on-us-election/>
- As the main member, provide technical support, including deactivate/reactivate 1.6M participants' Facebook and Instagram accounts, data transfer and management between NORC and Meta

01/2021-03/2021

Project: SQL Parser

- Parse queries from external researchers into important statistics, enable more advanced safety checks and monitors on the data access patterns
- As the tech lead, design the proposal and implement, apply and monitor the tool

03/2021-09/2021

Project: Private Survey Analysis

- build an end-to-end solution to empower external researchers to securely upload their non-Meta data into a Meta owned environment, where they can securely analyze the non-Meta data and Meta data together
- As the tech lead, design the proposal, and leverage homomorphic encryption (<https://www.microsoft.com/en-us/research/project/microsoft-seal/>) to implement analysis library in order to protect researchers' non-Meta data along with their derivatives

06/2021-12/2021

Project: Survey Insights

- Survey Insights is built on the top of sandwich surveys to empower linking Meta data to a survey conducted by external parties, and recruiting for a Facebook/Instagram survey using panels from external vendors
- As the main member, help UI implementation and tokenization for the identification protection

06/2020-present

Project: Researcher API platform

- support the broad social science community in responsible access to Meta's data, so they can help independently assess Meta's impact on society
<https://fort.fb.com/researcher-apis>
- As the main member, build up the back-end infrastructure, including data exposure, data transfer, leveraging AWS to build users' clients

Education Background

09/2009-09/2013 Computer School, Wuhan University (WHU), Wuhan, China
B.Sc. in Computer Science and Technology GPA: 3.73 (5/256)

09/2014-09/2016 The Department of Computer Science, The University of Chicago, Chicago, USA
Master in Computer Science

09/2016-12/2019 The Department of Computer Science, The University of Chicago, Chicago, USA
Ph.D. in Computer Science

Academic Experience

09/2017-12/2019 The University of Chicago, Chicago, USA Advisor: Prof. Shan Lu
BFix: Automatically Fixing Concurrency Bugs via Bypassing

- Investigate bypassing strategy in concurrency bug fixing, developing tools to automatically generate high-quality bypassing patches for concurrency bugs
- As the leader, involved in investigation, tool implementation, paper writing

06/2017-09/2017 The University of Chicago, Chicago, USA Advisor: Prof. Shan Lu
PCatch: Automatically Detection Performance Cascading Bugs in Cloud System

- Propose adapted happens-before model to detect performance cascading bugs in distributed systems
- Design and implement loop scalability analysis
- As the co-author, our paper is accepted by EuroSys

10/2015-11/2016 The University of Chicago, Chicago, USA Advisor: Prof. Shan Lu
Transactional Memory Support for Concurrency-Bug Failure Recovery in Production Runs

- Explore the design space of concurrency-bug failure recovery, leveraging hardware and software transaction memory techniques to help software survive from concurrency-bug failures
- As the leader, involved in algorithm proposal, tool implementation, experimental verification, paper writing
- As the first author, our papers are accepted by ATC and TPDS

01/2015-10/2015 The University of Chicago, Chicago, USA Advisor: Prof. Shan Lu
Understanding and Generating High Quality Patches for Concurrency Bugs

- Understand the gap between manual patches and previous automatically generated patches, designing tools to automatically generate patches which are as simple as manual ones
- As the core member, investigate and understand over 70 manual patches, designing tools to automatically generate high-quality patches for concurrency bugs
- As the co-author, our paper is accepted by FSE

Publication

Yuxi Chen, Shu Wang, Shan Lu, Karthikeyan Sankaralingam, **Applying Transactional Memory for Concurrency- Bug Failure Recovery in Production Runs**, IEEE Transactions on Parallel and Distributed System 2018 (TPDS)

Yuxi Chen, Shu Wang, Shan Lu, Karthikeyan Sankaralingam, **Applying Hardware Transactional Memory for Concurrency-Bug Failure Recovery in Production Runs**, In 2018 USENIX Annual Technical Conference (ATC'18).

Jiaxin Li, **Yuxi Chen**, Haopeng Liu, Shan Lu, Yiming Zhang, Haryadi S. Gunawi, Xiaohu Gu, Xicheng Lu, Dongsheng Li, **PCatch: Automatically Detection Performance Cascading Bugs in Cloud Systems**, In Proceedings of the Thirteenth EuroSys Conference (EuroSys'18).

Haopeng Liu, **Yuxi Chen**, Shan Lu, **Understanding and Generating High Quality Patches for Concurrency Bugs**, In Proceedings of the 2016 24th ACM SIGSOFT international symposium on foundations of software engineering (FSE'16).

Jin Liu, **Yuxi Chen**, Xu Chen, Jianli Ding, Kaushik Roy Chowdhury, Qiping Hu, Shenling Wang, **A Cooperative Evolution for Qos-driven Web Service Composition**, *Automatika-Journal for Control, Measurement, Electronics, Computing and Communications* , 54(2013) 4, 438–447

Skills

Language: C, C++, Python, Java, Bash
Instrumentation & Analysis: LLVM, WALA, GCC, GDB
Tool & Libraries: Pthread, SVN, MySQL
Platforms: Linux, CentOS, MacOS

Competition Experience

09/2011-10/2011 China Undergraduate Mathematical Contest in Modeling (CUMCM)	First Place in Hubei area
09/2011-10/2011 International Genetically Engineered Machine Competition (IGEM)	Bronze Medal in Asia
01/2011-04/2011 Microsoft Imagine Cup	Third Place for Software Design in China region

Scholarship and Awards

- 07/2018 ATC student travel grant (USA)
- 11/2016 FSE student travel grant (USA)
- 2012-2013 National Scholarship (1%), granted by the country (China)
- 2012-2013 Google Excellence Scholarship (3%), granted by Google (China)
- 2011-2012 National Scholarship (1%), granted by the country (China)