

## MENGFEI(Angela) REN

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### RESEARCH STATEMENT

My present academic focus revolves around **Software Engineering**. Specifically, I am dedicated to developing comprehensive analysis and testing tools that integrate **software engineering methodologies** with other techniques. These tools aim to enhance the correctness and robustness of IoT wireless protocols, modern compilers, and other ad-hoc systems.

### EDUCATION

<b>University of Texas, Arlington</b> <b>Ph.D.</b> in Computer Science Dissertation: <i>Fuzz Testing of Zigbee Protocol Implementation</i> Advisors: Dr. Yu Lei and Dr. Jiang Ming	<i>Aug. 2017 – Aug. 2023</i>
<b>University of Texas, Arlington</b> <b>M.S</b> in Computer Science	<i>Aug. 2011 – Dec. 2013</i>
<b>China University of Petroleum</b> B.S in Computer Science and Technology	<i>Sept. 2007 – Jul. 2011</i>

### PEER-REVIEWED PUBLICATIONS

<b>P7 Revisiting Optimization-Resilience Claims in Binary Diffing: Insights from Peephole Optimization Analysis</b> Xiaolei Ren, <b>Mengfei Ren</b> , Yu Lei, Jiang Ming In <i>Proceedings of the 2025 ACM International Conference on the Foundations of Software Engineering</i> . Trondheim, Norway. June 2025.	<i>FSE '25</i> <i>Acceptance Rate: 22.2%</i>
<b>P6 Low-entropy Packed Binary Detection via Accurate Hardware Events Profiling</b> Erika Leal, <b>Mengfei Ren</b> , Sijia Shi, Jiang Ming In <i>Proceedings of the 2025 IEEE International Symposium on Hardware Oriented Security and Trust</i> . San Jose, CA, USA. May 2025.	<i>HOST '25</i>
<b>P5 An AI-based Security Analysis Solution for DevSecOps</b> Abdullah Al Noman, Samson Olugbenga Idowu, Rolly Davany Mougoue Kakanou, Paolo Ciancarini, <b>Mengfei Ren</b> In <i>Proceedings of the 2025 International Symposium on Intelligent Computing and Networking</i> . San Juan, Puerto Rico. 2025.	<i>ISICN '25</i>
<b>P4 Intelligent Zigbee Protocol Fuzzing via Constraint-Field Dependency Inference</b> <b>Mengfei Ren</b> , Haotian Zhang, Xiaolei Ren, Jiang Ming, Yu Lei In <i>Proceedings of the 28<sup>th</sup> European Symposium of Research in Computer Security</i> . The Hague, The Netherlands. 2023.	<i>ESORICS '23</i> <i>Acceptance Rate: 19.5%</i>
<b>P3 Security Analysis of Zigbee Protocol Implementation via Device-agnostic Fuzzing</b> <b>Mengfei Ren</b> , Xiaolei Ren, Huadong Feng, Jiang Ming, Yu Lei In <i>ACM Digital Threats: Research and Practice</i> . 2022.	<i>DTRAP Journal '22</i>

**P2 One Size Does Not Fit All: Security Hardening of MIPS Embedded Systems via Static Binary Debloating for Shared Libraries**Haotian Zhang, **Mengfei Ren**, Yu Lei, Jiang MingIn *Proceedings of the 27<sup>th</sup> International Conference on Architectural Support for Programming Languages and Operating Systems*, Lausanne, Switzerland. 2022.**ACM Artifacts Evaluation Badges:** *Functional, Available, Reproduced*

ASPLOS '22

Acceptance Rate: 20.1%

**P1 Z-Fuzzer: Device-agnostic Fuzzing of Zigbee Protocol Implementation****Mengfei Ren**, Xiaolei Ren, Huadong Feng, Jiang Ming, Yu LeiIn *Proceedings of the 14<sup>th</sup> ACM Conference on Security and Privacy in Wireless and Mobile Networks*. Abu Dhabi, UAE (Virtual). 2021.**ACM Artifacts Evaluation Badges:** *Functional, Available, Reproduced*

WiSec '21

Acceptance Rate: 28.1%

**0-day Vulnerabilities Detected:**[CVE-2020-27890](#), [CVE-2020-27891](#), [CVE-2020-27892](#)SUBMITTED & UNDER REVIEW

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**S2 Fuzzing Zigbee Protocol Implementation with Combinatorial Testing****S1 Software Vulnerability Analysis Across Programming Language and Program Representation Landscapes: A Survey.**TEACHING EXPERIENCE

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**Baylor University**

CSI 3373 Software Assurance and Testing

**University of Alabama in Huntsville**

CPE 212 Fundamental of Software Engineering

CPE 645/CS 685 Applied Cryptography

**University of Texas at Arlington**

CSE 4380/5380 Information Security I Laboratory

WORKING EXPERIENCE

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**Baylor University (Waco, TX)**

Aug. 2025 – Present

Assistant Professor in CS Department

**University of Alabama in Huntsville (Huntsville, AL)**

Aug. 2023 – May 2025

Assistant Professor in ECE Department

**Toyota North America (Plano, TX)**

May 2021 – Aug. 2021

Intern – Vehicle Security Testing

**Secureworks (Atlanta, GA)**

Jan. 2015 – Jul. 2016

Software Dev Engineer

HONORS AND REWARDS

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UA Huntsville New Faculty Research Program Award

2024

UT Arlington 2023 Summer Dissertation Fellowship

2023

UT Arlington CSE Cyneta Networks Outstanding Graduate GTA

2022

USENIX Security Symposium Diversity Grant

2022

**IEEE Symposium on Security and Privacy Student Travel Grant**

2019

PROFESSIONAL SERVICES

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**Technical Program Committees:**

IEEE SoutheastCon 2024

2023

**Peer Reviewers**

The Journal of Systems & Software (JSS)

2024