

# Meng Wu

Ph.D. in Computer Engineering, Virginia Tech

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## Research Interests

*Program Analysis, Smart Contract Security, Side Channel Attack, Program Synthesis*

I develop automated tools for detecting and mitigating side channels using program analysis and formal verification techniques. I am also interested in synthesizing runtime enforcer to improve software safety. I am currently developing tools for blockchain platform and smart contract to improve safety and security.

## Education

2014 – 2019: Ph.D. in Computer Engineering, Virginia Tech, USA

Dissertation: Analysis and Enforcement of Properties in Software Systems

2008 – 2012: B.S. in Electric Power Engineering and Automation, Shanghai Jiao Tong University (SJTU), CHINA

Thesis: Research and Development of a Motor Control Platform for Education

## Research Experience

2014 – 2019: **Center for Embedded Systems for Critical Applications (CESCA), Virginia Tech**

*Research Assistant*

Co-Advised by: Professor Chao Wang and Patrick Schaumont

2017 – 2019: **Department of Computer Science, University of Southern California**

*Visiting PhD Student*

Advised by: Professor Chao Wang

2011 – 2012: **Department of Electrical Engineering, SJTU**

*Research Assistant*

SJTU-Freescale Joint Laboratory

## Publication

Shield Synthesis for Real: Enforcing Safety in Cyber-Physical Systems

**Meng Wu**, Jingbo Wang, Jyotirmoy Deshmukh and Chao Wang. FMCAD, 2019

Abstract Interpretation under Speculative Execution

**Meng Wu** and Chao Wang. PLDI, 2019

Eliminating timing side-channel leaks using program repair

**Meng Wu**, Shengjian Guo, Patrick Schaumont, and Chao Wang. ISSTA, 2018

Adversarial symbolic execution for detecting concurrency-related cache timing leaks [**Distinguished Paper**]

Shengjian Guo, **Meng Wu**, and Chao Wang. FSE, 2018

Auto Safety Guards: Reactive Synthesis for Protecting Safety-Critical Automotive Systems

**Meng Wu**, Haibo Zeng, Chao Wang. DAC, 2017

Symbolic Execution of Programmable Logic Controller Code

Shengjian Guo, **Meng Wu**, and Chao Wang. FSE 2017

Synthesizing Runtime Enforcer of Safety Specification under Burst Error

**Meng Wu**, Haibo Zeng, Chao Wang. NFM, 2016

Synthesis of Fault-Attack Countermeasures for Cryptographic Circuits

Hassan Eldib, **Meng Wu**, Chao Wang. CAV, 2016

## Teaching Experience

2014: **Department of Electrical and Computer Engineering, Virginia Tech**

*Teaching Assistant*

Open Electronics Lab

2012: **Department of Electrical Engineering, SJTU**

*Teaching Assistant*

Laboratory Experiment of Motor Control

## Work Experience

2019/07 – Present: **Ant Financial, Shanghai, CHINA**

*Technique Expert*

Blockchain Department

2016/05 – 2016/08: **Microsoft Research Asia, Beijing, CHINA**

*Research Intern*

Software Analytics Group

2012/09 – 2014/06: **Envision Energy Limited, Shanghai, CHINA**

*Firmware Engineer*

R&D Department

## Specialties

LLVM compiler, SMT solver (Z3), BDD solver (CUDD), Fuzz Testing