ZITAO CHEN

X410C, ICICS, University of British Columbia, BC, Canada

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EDUCATION

1. **Bachelor of Engineering in Information Security**   Sept. 2014 - Jun. 2018
   School of Computer Science, **China University of Geosciences (Wuhan)**
   GPA: 87.67/100

2. **Master of Applied Science in Electrical and Computer Engineering**   Sept. 2018 - present
   The University of British Columbia
   Supervisor: Dr. Karthik Pattabiraman

STANDARD TESTS

IELTS: R7 L8 W6.5 S6; Total: 7.0
GRE: V158 Q168 AW:3.5; Total: 326 (3.5)

RESEARCH EXPERIENCE

Wearable Computing Security   Undergraduate research

· Lightweight and real-time key establishment scheme for wearable embedded devices.
· Sensing user real-time motion to secure communication between body-worn devices.
· Key establishment scheme leveraging original sensory data.
· I *independently* proceeded the project under minimal supervision.

Reliability in Machine Learning Systems   Graduate Research

· *Research question:* How to identify the critical bits in ML systems under the presence of transient hardware faults.
· We analyze the mathematical properties of common ML systems, and find many of them exhibit monotonicity, which constraints the fault propagation behaviors.
· We design a binary-search like fault injector to identify these critical bits, *without* resorting to doing fault injection (FI) on every state space.
· Our approach can identify over 99.54% of critical bits with significantly lower overhead than doing FI on every state space, which is the only other way to find these critical bits.

PUBLICATION

1. <u>Zitao Chen</u>, Wei Ren, Yi Ren and Kim-Kwang Raymond Choo, "LiReK: A Lightweight and Real-time Key Establishment Scheme for Wearable Embedded Devices by Gestures or Motions", *Future Generation Computer Systems* (2018): 84, 126-138, [2018 Impact Factor: 5.768]

2. <u>Zitao Chen</u>, Guanpeng Li, Karthik Pattabiraman, Nathan DeBardeleben "BinFI: An Efficient Fault Injector for Safety-Critical Machine Learning Systems", *In Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis **(SC'19)**,* **Acceptance rate: XX%**

COMPUTER SKILLS

Programming Language	Python, C, Java, C++
Operation System	Linux, Windows