# Khaled E. Ahmed


**Contact Information**

6335 Thunderbird Cres.,
V6T 2G9, Vancouver, BC, Canada,

+1 (778) 751-8116
khaledea@ece.ubc.ca
k.e.elsayed@gmail.com


**Education**

**Electrical and Computer Engineering, University of British Columbia, Canada**
Doctorate of Philosophy in Electrical and Computer Engineering (Sept. 2017 to date)

- Development of dynamic slicing tools for Android and Java programs.
- Reverse engineering and analysis of Android malware that infiltrated the Google Play store.
- Development of an automated dynamic analysis tool for Android malware detection.
- Grade: A+ (GPA: 4/4)

**Faculty of Engineering, Alexandria University, Alexandria, Egypt**
Masters of Science in Electrical and Electronic Engineering (Sept. 2014 to July 2017)

- CDMA Network-on-chip design.
- Software/Hardware Co-design of cryptographic applications.
- Grade: Distinction with degree of honor (**GPA**: 3.95/4)

Bachelor's Degree in Electrical and Electronic Engineering (Sept. 2009 to July 2014)

- Thesis: ASIC implementation of TMS320C25 DSP (With Si-Ware Systems and FabCat)
- Grade: Distinction with degree of honor (**GPA**: 3.94/4, **Rank**: $2^{nd}$/332)

**Research Internships**

**Ecole Polytechnique Federale de Lausanne (EPFL)**, Lausanne, Switzerland
(July 2014 to Sept. 2014)

- Optimized hardware accelerators by exploiting parallelism using High Level Synthesis (HLS).

**Teaching Experience**

**University of British Columbia**, Vancouver, Canada (Winter 2018 to date)

- Software Engineering CPEN 321
- Computer Architecture CPEN 411

**Alexandria University**, Alexandria, Egypt (Fall 2014 to Spring 2017)

- x86 Microprocessors
- Computer Architecture
- Modeling and Design of VLSI Integrated Circuits
- Digital Integrated Circuits
- Logic Circuit Design
- Semiconductor Devices

**Online course:** Hardware Design using VHDL vlsiacademy.org/vhdl1.html

**Papers in Program Analysis**

Michael Cao*, **Khaled Ahmed***, Julia Rubin, "Spoiled Apples Ruin the Bunch: Anatomy of Google Play Malware", *The 44th ACM/IEEE International Conference on Software Engineering (ICSE), 2022. *Equal contribution*

**Khaled Ahmed**, Mieszko Lis, Julia Rubin, "Slicer4J: A Dynamic Slicer For Java", *ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), tools track, 2021*

**Khaled Ahmed**, Mieszko Lis, Julia Rubin, "MANDOLINE: Dynamic Slicing of Android Applications with Trace-Based Alias Analysis", *IEEE International Conference on Software Testing, Verification and Validation (ICST),* ***Distinguished Paper Award****, 2021*

Michael Cao, Sahar Badihi, **Khaled Ahmed**, Peiyu Xiong, Julia Rubin. "On Benign Features in Malware Detection". *The 35th IEEE/ACM International Conference on Automated Software Engineering (ASE), short paper, 2020*

## Papers in Digital Hardware Design

**Khaled E. Ahmed**, Mohamed R. Rizk, Mohammed M. Farag, "Overloaded CDMA Crossbar for Network-On-Chip", *IEEE Transactions on Very Large Scale Integration Systems, Volume: PP, Issue: 99.*

**Khaled E. Ahmed**, Mohamed R. Rizk, Mohammed M. Farag, "Overloaded CDMA Interconnect for Network-on-Chip (OCNoC)", *IEEE International Conference on Reconfigurable Computing and FPGAs (ReConfig), 2016.*

**Khaled E. Ahmed**, Mohamed R. Rizk, Mohammed M. Farag, "Aggregated CDMA Crossbar for Network-on-Chip", *International Conference on Microelectronics (ICM), 2016.* **Best poster award**

Ahmed S. Eissa, Mahmoud A. Elmohr, Mostafa A. Saleh, **Khaled E. Ahmed**, Mohammed M. Farag, "Hardware Implementation of A SHA-3 Application-Specific Instruction Set Processor", *International Conference on Microelectronics (ICM), 2016.*

Mostafa Medra, **Khaled E. Ahmed**, Timothy N. Davidson, "MOSIC: A New Ordering for OSIC MIMO Detection", *IEEE International workshop on Signal Processing advances in Wireless Communications (SPAWC), 2016.*

Ahmed S. Eissa, Mahmoud A. Elmohr, Mostafa A. Saleh, **Khaled E. Ahmed**, Mohammed M. Farag, "SHA-3 Instruction Set Extension for A 32-bit RISC Processor Architecture", *IEEE International Conference on Application-specific Systems, Architectures and Processors, 2016.*

**Khaled E. Ahmed**, Kareem M. Attiah, Ahmed S. Eltrass, "Multiple Signal Classification Algorithm Compensated by Extended Kalman Particle Filtering for Wi-Fi Through Wall Multi-Target Tracking", *IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications, 2016.*

**Khaled E. Ahmed**, Mohammed M. Farag, "Hardware/Software Co-Design of A Dynamically Configurable SHA-3 System-on-Chip (SoC)", *IEEE International Conference on Electronics, Circuits, and Systems (ICECS), 2015.*

**Khaled E. Ahmed**, Mohammed M. Farag, "Parallel Overloaded CDMA Interconnect (OCI) Bus Architecture for On-Chip Communications", *IEEE International Conference on Electronics, Circuits, and Systems (ICECS), 2015.*

**Khaled E. Ahmed**, Mohammed M. Farag, "Enhanced Overloaded CDMA Interconnect (OCI) Bus Architecture for on-Chip Communication", *IEEE Annual Symposium of High Performance Interconnects (HOTI), 2015.*

**Khaled E. Ahmed**, Mohammed M. Farag, "Overloaded CDMA Bus Topology for MPSoC Interconnect", *IEEE International Conference on Reconfigurable Computing and FPGAs (ReConfig), 2014.*

## Awards

- Natural Sciences and Engineering Research Council - Canada Graduate Scholarships (NSERC CGS-D) (Jan. 2020 to Jan. 2022)
- Four Year Fellowship (FYF) from the University of British Columbia (Sept. 2017 to Jan. 2020)
- Graduate Support Initiative (GSI) from the University of British Columbia

(Sept. 2017, Sept. 2018)

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| Skills & Background | Java, Python, Andorid Studio, C/C++, MATLAB, VHDL, Verilog, and LaTeX |
| Relevant PhD Coursework | Mobile Analysis, Compilers, Software Testing, Computer Architecture. |
| References | Available upon request |