

# OMAR ABOUHUSSEIN

10343 San Diego Mission Rd, San Diego CA 92108 · +1-765-337-0199 · omarabouhussein@hotmail.com ·

[www.linkedin.com/in/omar-abouhussein](http://www.linkedin.com/in/omar-abouhussein)

## WORK EXPERIENCE

### Senior Software Engineer

November 2023 - Present

### Software Engineer

July 2020 - October 2023

Qualcomm | San Diego CA

- Spearheaded the complete Software Development Life Cycle (SDLC) for various cutting-edge software features within Layer 2 of the OSI Computer Network model for the successful release of multiple best-selling LTE & 5G modem chipsets in the market after close collaboration with project managers and other stakeholders to understand the detailed requirements of these features.
- Identified, championed, and worked to implement improvements in internal practices such as optimizing software infrastructure, automating manual/redundant processes, protecting proprietary algorithms and designs all for better confidentiality, privacy, scalability, maintainability, cost efficiency, etc.
- Drove the resolution of 200+ LTE field and customer issues with high code defect fix rate which improved the overall system stability and enabled successful commercialization of LTE modem chipsets ahead of the market.
- Reduced memory footprint, improved throughput, and cut latency in LTE/4G Layer 2 code by carefully identifying and optimizing memory usage, bottlenecks, and overall stack performance which resulted in extensive improvement in both chip performance and user experience.
- Recognized and received commendation from management for outstanding analytical/problem-solving skills and for consistently building/delivering high-quality code by enforcing best practices around software engineering architecture/processes such as code reviews, unit-testing, etc. & by meeting project milestones ahead of schedule.
- Actively participated in code reviews and team meetings, providing valuable feedback to colleagues, and ensuring adherence to coding standards to maintain a compact, clean, scalable, reusable, and memory efficient codebase.

### Software Engineering Intern

May 2019 - August 2019

Qualcomm | San Diego CA

- Significantly enhanced the off-target testing and as well as the crash-triaging process by creating multiple visuals and plots, resulting in improved system stability and faster issue resolutions for the LTE L1 team within the modem chipset.
- Created a Python-Jenkins intelligent email bot to automate the email command execution and bug-tracking process within the system, saving end users hours of time with their day-to-day tasks.

### Wearable OS Research

August 2019 - January 2020

Undergraduate Research Student | Purdue University | West Lafayette IN

- Assessed and improved Wearable Android OS reliability by error injection and Java fuzz testing, boosting the stability of the health & fitness apps and mitigating data breaches.

### Indoor Positioning System (IPS) Research

January 2018 - August 2018

Undergraduate Research Student | Purdue University | West Lafayette IN

- Developed an app and the backend software to achieve high-precision (approximately 10-cm) positioning in an indoor environment to allow for a more accurate in-person shopping experience, efficient inventory management, and optimized store layouts using JavaScript, AWS IoT MQTT, and AWS IAM.

### Data Analytics for Smart Cities

Summer 2018

Undergraduate Research Student | Purdue University | West Lafayette IN

- Designed a system to detect potholes and cracks on roads to enhance road safety, reduce accidents, and save repair costs using an Intel RealSense Depth Camera for data collection, TensorFlow for creating/training/and making inference on a CNN model, and a Raspberry PI for deployment.

## EXTRACURRICULAR EXPERIENCE

### SPARK Challenge

December 2018

Undergraduate Research Student | Purdue University | West Lafayette IN

- Designed a multi-purpose safe featuring a math-triggered solenoid lock and a responsive alarm system all coded by a C-coded STM320F microcontroller.
- Presented the prototype as a candy-filled jar, captivating and incentivizing children to solve the mathematical equations and be rewarded for their learning experience.
- Awarded 3rd place of 70 teams by the school of ECE, ECE Student Society, and General Motors for the outstanding achievement in designing and prototyping a microcontroller-based project.

### Habitat For Humanity

February 2015

Cambodia

- Diligently worked with a team of 18 members to establish a foundation of two houses for the less fortunate.

## EDUCATION

### Purdue University

August 2016 - May 2020

Bachelor of Science in Computer Engineering, GPA 3.6

Certificate of Entrepreneurship and Innovation

#### *Relevant Coursework:*

- Applied Algorithms, Intro to Computer Networks, Intro to Computer Security, Discrete Mathematics, Data Structures, SW Engineering Tools Lab, Microprocessor Systems and Interfacing, Advanced C Programming, Python for Data Science, Digital System Design

#### *Undergraduate Teaching Assistant:*

- Data Structures, SW Engineering Tools Lab

#### **SKILLS**

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- **Programming Languages:** C/C++/C-, Python, Java, MATLAB, Bash
- **Tools & Frameworks:** Git, Perforce, Jenkins, JIRA, TensorFlow, AutoCAD, Linux
- **Concepts:** Data Structures & Algorithms, Computer Networks/Communication, System Performance & Reliability, Multithreaded/Concurrent/Embedded/Object-oriented Programming, Real-Time Operating Systems (RTOS)
- **Debugging & Analysis:** GDB, QXDM, WireShark, JTAG/T32

#### **LICENSES & CERTIFICATIONS**

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| • <b>Machine Learning Specialization</b> - DeepLearning.AI | <b>January 2023</b>  |
| • <b>Getting Started with AWS ML</b> - AWS                 | <b>February 2023</b> |
| • <b>AWS Cloud Practitioner Essentials</b> - AWS           | <b>February 2023</b> |

#### **HONORS & AWARDS**

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| • <b>Dean's List (1)</b> - Purdue University     | <b>Spring 2019</b>             |
| • <b>Semester Honors (6)</b> - Purdue University | <b>Fall 2017 - Spring 2020</b> |
| • <b>QualStar Award (1)</b> - Qualcomm           | <b>Summer 2019</b>             |