OMAR FLAYAN

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SENIOR RESEARCH AND DEVELOPMENT ENGINEER

Experienced and accomplished senior R&D engineer with more than 6 years of experience, specializing in product development within the domains of Application-Specific Integrated Circuit (ASIC) and Electronic Design Automation (EDA). Proficient in utilizing Django and QT technologies to create robust end-to-end solutions. Demonstrates expertise in programming with C++ and Python, contributing significantly to the development of comprehensive software stacks. A track record of success in troubleshooting and optimizing product performance, particularly in real-time applications.

Embedded Systems • Performance optimization • Product Development • Database Management • Problem Solving
Team Collaboration • Web Application Development • Critical Thinking • Data Structures • Time Management
Test-Driven Development • Application Programming Interface (API) • SOLID Principals

Languages: Python, C/C++, Bash, C-shell
Web: JavaScript, CSS3, HTML5, JQuery, XML, JSON, AJAX
Web Services: Rest API, AJAX
Web/App Servers: Apache (Tomcat)
Frameworks: Django, Spring (Boot, Security, MVC, Dependency Injection, AOP), Hibernate, QT, Express
Databases: MySQL
Design Patterns: Singleton, Factory, Decorator, Builder
SDLC: Agile/ Scrum
Tools: Gradle, Maven, IntelliJ, PyCharm, Eclipse, Visual studio, Jira, GNU Compiler Collection (GCC)
Platforms: Linux, Windows, MacOs, Red Hat (RHEL 6, 7 & 8)
Application/Software: Xcelium, Verdi, VCS, Execman, Insisive

PROFESSIONAL EXPERIENCE

CAREER NOTE: *Completed on-campus studies and currently taking distance education courses to complete a* ***Master's Degree in Computer Science*** *(Available for full-time, W-2 employment).*

SYNOPSYS INC, Herzliya, Israel • 02/2019 – 05/2023
Synopsys technology is an electronic design automation (EDA) company (US based company).

Sr. Research and Development Engineer
Full stack development

- Created web application features using CSS, HTML5, JavaScript and jQuery with Django and Python, that were used by many customers in simulating and debugging their hardware designs.
- Built features to present hardware design simulation results and scores for further analysis using C++ and QT as a desktop application.
- Optimized hardware design testing simulation and product UI performance by improving algorithms, data structures, APIs, and DB queries, reducing response time by 80x, and improving memory and CPU usage by 4x.
- Designed customer features including layouts and APIs using Multithreading, Django, RestAPI, CSS and HTML5 to retrieve design simulation data, present it, categorize it and bucketing result, which helped customers in debugging their hardware designs.
- Redesigned legacy flows of collecting simulated data that used to suffer from race conditions in a real time multi-CPU cores simulation environment, by enhancing algorithms and using threading locks, which resulted in stable simulation results.
- Engineered multithreaded services leveraging C++ threading and worker mechanisms to distribute simulations across farms, facilitating efficient data collection and consolidation. This optimized simulation processes for enhanced speed, consistency, and overall efficiency.
- Developed an advanced regression tool utilizing Python, C-shell, Perl, and Bash, enhancing regression outcomes for developers. This tool significantly identified functional disruptions through in-depth analysis, aiding in improved code stability and performance evaluation.
- Formulated feature specifications and architecture utilizing Confluence to enhance documentation quality and provide a reliable point of reference.

Technologies Used: *Python, Django, C, C++, QT, JavaScript, HTML, CSS, Bash, C-shell, Perl, jQuery.*

CADENCE DESIGN SYSTEMS, Petah Tikva, Israel • 08/2017 – 02/2019

Electronic design automation (EDA) company (US based company).

Software Engineer

Python and C++ software and tool development.

- Developed features that extract signals and gates from design under test (DUT) written in Verilog/ systemVerilog languages. These features have been used by customers in simulating their hardware designs.
- Designed features to verify hardware design simulates as expected using C++ and Python which helped client enhance hardware design before printing to a real physical chip.
- Created custom verification tools on top of hardware simulators to verify customer hardware design using Python and C++ which minimized design issues and saved thousands of dollars in physical chips.
- Enhanced simulation time by optimizing threads communication and algorithms, resulted in 4x improved simulation time.
- Designed feature specifications using confluence that led to satisfying customer needs in simulating hardware designs.
- Developed product build flows using Makefiles and its rules, that has been used by the product in simulating and evaluating design results.

Technologies Used: *Python, C++, c-shell, Bash, Makefiles, Perl, C.*

INDEPENDENT CONTRACTOR EXPERIENCE

FREELANCE • 02/2017 – 08/2017

Multiple clients ranging between commercial and medical sectors.

Frontend Developer

- Developed new websites views using AngularJS2, CSS, HTML5, JavaScript and jQuery.
- Enhanced frontend by adding new customer features including new pages, tables to present data and graphs.
- Optimized the UI of the pages by improving layouts and coloring, using HTML and CSS.
- Implemented pagination to allow better presentation and performance, using AngularJS2.

Technologies Used: *Angular JS2, CSS, HTML5, jQuery, JavaScript.*

ACADEMIC PROJECTS

Maharishi International University (2023)

- **University Management System:** Developed a full stack project based on Java, spring boot, CSS3, HTML5 and JavaScript with MySQL as a database. This project serves as a university management system that helps students and professors manage their courses and classes. Utilized Spring, Spring boot, Hibernate, Java, JavaScript, Gradle.

- **Library System**: A desktop application that is responsible for handling functionalities of the library; managing books, users, and book borrowing. Designed with a simple user interface as part of a 3-person team. Created sequence diagrams and implemented CRUD operations for Books and Users. Integrated all modules with application. Utilized JavaFX, StarUML, Git, GitHub, Eclipse for IDE.

- **Bank System:** A web application that is serves as a mini bank system, allowing users to open accounts, withdrew, deposit and manage accounts. Utilized NodeJS, JS, CSS3, HTML5, MySQL, Express.

EDUCATION

Master of Science in Computer Science

(In progress via distance education; expected completion 12/2025)

Maharishi International University, Fairfield, Iowa

Key Courses: Software Engineering, Algorithms, Web Applications Development, Enterprise Architecture

Bachelor of Science in Computer Engineering
Birzeit university, Birzeit/ Ramallah, West Bank (2017)