



ALEXANDER  
ONOFREI

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## PROFESSIONAL SUMMARY

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Motivated, hardworking, and reliable software engineer with a passion for environmental conservation, adventure, and outdoor activities. Demonstrates a keen understanding of system requirements and adeptly develops robust code to meet them. Proficient in testing, debugging, and resolving issues within existing software systems.

## SKILLS

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- Able to work under pressure
- Able to grasp concepts quickly and efficiently
- Problem-solving
- Excellent time management
- Great communication skills
- Research

## TECHNICAL EXPERTISE

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**Languages:** Java, C++, C, Python, CSS, HTML, TypeScript, VHDL, PostgreSQL

**Development Tools:** IntelliJ, CLion, Eclipse, PyCharm, Android Studio, Git

**Frameworks:** Spring Integration, Angular, Flask, React

### Knowledge:

- Proficient in both Object-Oriented architecture and Procedural-Oriented architecture.
- Solid understanding of essential data structures, such as balanced trees, binary trees, hashing, and graphs.
- Strong grasp of iterative and recursive software algorithms.
- Proficient with diverse software testing methodologies, including unit, integration, and system testing.
- Extensive knowledge and hands-on experience with a variety of hard and soft real-time operating systems.
- Comprehensive knowledge of communication protocols (TCP/IP, UDP, HTTP, SIP, SDP, MSRP, HELD)
- Strong grasp of computer architecture and digital system logic, including sequential logic, algorithmic state diagrams, and asynchronous circuits.

## EXPERIENCE

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**Software Engineer - Intern, Motorola Solutions**, Jan 2021-Aug 2022, Gatineau, QC

- Designed, developed, and tested SMS prototype supporting next-generation 911 SMS communication applications, incorporating SIP, SDP, and MSRP protocols. Utilized Spring Boot, Redis, C++, and Erlang.
- Designed, developed, and tested full-stack cloud simulators for distributed systems, encompassing UML design, API design, endpoint design and front-end design. Employed Spring Boot, Angular, and MongoDB.
- Containerized and deployed full-stack applications and prototypes in a cloud environment using Azure DevOps, Kubernetes, and Docker.
- Collaborated with senior engineers to implement Agile Scrum development methodologies for all prototype development tasks.

### **Software Engineer – Research Assistant, 3IT Research Center, Sep 2021 - Dec 2021, Sherbrooke, QC**

- Developed, tested, and designed applications for gathering information from specific sensors on Razon+, SolarEdge, and Stace solar panels, leveraging Python. Tasks included UML design, API design, and database design.
- Employed relational databases (PostgreSQL) and container orchestration with Docker to manipulate and manage Big Data, ensuring the delivery of clear and structured data to clients.
- Collaborated with senior engineers to implement Agile Scrum development methodologies for all prototype development tasks with the use of GitLab
- Developed and tested Python modules that facilitate seamless interfacing with specific four-terminal sensing instruments.

### **Support Technician - Intern, Shared Services Canada, May 2020 - Aug 2020, Ottawa, ON**

- Developed, integrated, and maintained IT infrastructure components, providing technical support.
- Processed large text files, extracted data using AWK and UNIX shell.
- Supported backup, recovery, and hardware/software changes impact assessment.
- Investigated and documented problems, interfaced with next-level support.

## **VOLUNTEERING AND PROJECTS**

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### **Computer Engineering Capstone – University of Ottawa**

- Developed a rugged drone-mountable radiofrequency scanner capable of operating in extreme conditions (-40°C to 50°C), facilitating the detection and pinging of cellular frequencies (3G, 4G, 5G) in network coverage-deprived remote areas.
- Designed, built, and tested a soft real-time operating system that delivers crucial information to the user. Implemented a LAN network and Client-Server architecture, enabling seamless communication through a REST API with the utilization of Spring Boot and React technologies.

### **Quebec Engineering Games – Robotic Competition**

- Secured an impressive 3rd place position while operating within a budget significantly smaller (10%) than that of the competition.
- Designed, conceptualized, tested, and successfully implemented a fully functional remote-guided robot, meticulously aligned with pre-defined requirements.
- Exhibited adeptness in programming Raspberry Pi boards and Arduino Uno boards.

## **EDUCATION**

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### **Master of Engineering, Software Engineering – Cybersecurity (Present)**

**Sherbrooke University** - Sherbrooke, QC

- 20 000\$ Research Grant
- Utilized artificial intelligence to effectively map a comprehensive national criminal network, identifying key actors, establishing connections, and uncovering globally utilized techniques.

### **Bachelor of Engineering, Computer Engineering - COOP Program**

**University of Ottawa** - Ottawa, ON

- Dean's List Honouree - 2020, 2021, 2022.
- Bursary for continued education in French.

