Sagar Syal

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Education

CARLETON UNIVERSITY **September 2019 – April 2024**

Bachelor of Engineering – Computer Systems Engineering

Professional Experience

Software Engineering Intern | Romaeris| May 2023 – September 2023

- Developed and maintained embedded software for mission-critical drone flight applications using C and C++, ensuring robust and efficient performance.
- Collaborated with cross-functional teams, including Systems Engineering, to ensure system-software consistency and refinement of software components; actively participated in Agile methodologies, including daily stand-ups, sprint planning, and retrospectives.
- Conducted code reviews, debugging, and wrote test procedures; analyzed and implemented corrections for defect reports, ensuring high-quality deliverables.
- Performed engineering testing in the field, investigated problems, and provided practical solutions; utilized development tools such as Microsoft Visual Studio, GIT, Docker, and GitHub

Tutor | Oxford Learning Kanata | September 2022 – April 2024

- Provided academic support in programming languages and computer science concepts.
- Developed custom lesson plans and teaching materials to enhance learning outcomes.
- Assisted students in understanding complex technical issues and improving their problem-solving skills.

Technical Skills

- **Languages:** C++, C, C#, Java, Python, JavaScript, Rust, Perl, Ruby
- **Tools:** Microsoft Visual Studio, VS Code, GIT, Docker, Jenkins, Jira, Eclipse, Microsoft office, VMware, PowerShell, Bash
- **OS:** Windows, Linux, MacOS, Android, Robot Operating system (ROS)
- **Frameworks:** STL, Boost, MFC, NumPy, .NET, JUnit, Bootstrap, Flask, Sklearn
- **Additional Skills:** Multithreading, socket programming, object-oriented programming (OOP), source control, AWS

Applied Projects

Autonomous Car Navigation & Mapping **September 2023 – April 2024**

Applied Project

- Utilized ROS, C++, and Python to test and optimize algorithms, significantly improving the performance and reliability of autonomous car navigation systems.
- Implemented advanced mapping techniques and sensor integration using ROS on a virtual Linux platform, facilitating accurate and real-time environmental mapping, crucial for the autonomous navigation system's decision-making processes.
- Applied multithreading for real-time data processing and socket programming for inter-component communication, using object-oriented programming (OOP) principles for modular design.

Surgical Robotics Project **January 2024 – April 2024**

Applied Project

- Programmed a robotic system specialized in laparoscopic surgery, utilizing Python, MATLAB, and Simulink to ensure precise control and efficient operation.
- Applied analytical skills in linear algebra and differential equations, and control system architectures, to enhance and refine the movement mechanics for robotic system
- Collaborated closely with medical professionals to integrate surgical requirements into the robot design, ensuring the system meets medical standards and optimizes patient safety and procedural efficiency