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KHUSHAL SINGH

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Portfolio: https://khushalksingh.vercel.app

EDUCATION

Ottawa, ON	**Carleton University**	**Sept 2017 – May 2022**

- BCS Honours, Computer and Internet Security Stream, minor in Mathematics
- Major GPA: 9.81/12, Dean's Honour List 2022
- Leetcode 75 badge

Availability: Available for full time positions / contracts

Technical Skills

Languages: C++, C, Java, Python, Objective-C, C#, JavaScript, XML, ReactJS, Shell Scripting
Technologies: Jenkins, Linux, Perforce, GitHub, TeamCity, JIRA, Docker, QT framework, Postman, Confluence
Databases: MongoDB, MySQL, NoSQL, SQL, PostgreSQL

EMPLOYMENT

Software Engineer	**Motorola Solutions**	**Jan 2021 – Oct 2022**

- Worked on MDS configurator for VESTA 911 Emergency Call Handling Software to develop an algorithm that reduced data validation time from 50 minutes to 6 minutes (83% enhancement)
- Efficiently inserted, extracted, and modified data from a PostgreSQL database using Python
- Developed test cases using C# and XML to validate the system before version upgrade deployments
- Resolved 25+ security vulnerabilities during infrastructure health checks on different labs
- Used Angular.ts and Material library to transform MDS user interface, reducing load time by 80% and improving user-friendliness
- Implemented automated white-source scans within testing pipelines across 10+ projects on TeamCity platform to ensure compliance of software dependencies with US Federal Laws
- Took charge of Scrum meetings in the Scrum Master's absence, ensuring seamless communication and progress towards sprint goals, and presented updates during biweekly sprint meetings

Software Infrastructure Developer	**Ford Canada**	**Sept 2020 – Dec 2020**

- Collaborated with ECG team consisting of 26 developers to update user profiles on BlackBerry's QNX infotainment software within Ford vehicles
- Created strategic unit test (UUT) cases for software functionality using C++, leveraging Google Test and Google Mock frameworks to achieve 100% code coverage
- Documented designs, validated efficacy, and utilized Jenkins to address bugs in 10+ generated software builds
- Actively contributed to the iterative improvement of the infotainment system, focusing on code quality, system optimization, and user experience, thereby reinforcing the software's reliability and user satisfaction in a competitive automotive market

Web Developer	**Carleton University**	**June 2020 – Aug 2020**

- Worked on the sWall project – a large interactive wall of screens showcasing the history, present activities, and success stories of the SCE Department to 4000 students
- Wireframed the system through Balsamiq sketches and developed it using Vue.js and CSS Bootstrap
- Built a Self-Assessment portal (CRUD app) where 4th-year engineering uploaded and received feedback on their capstone projects
- Launched a PyMongo-Flask application, using React.js for frontend and Python for backend, with MongoDB as the database; managed the exchange of data between frontend and backend using Axios API

PROJECTS

AceUni (Honours Project)	**Carleton University**	**Jan 2022 – April 2022**

- Engineered a full-stack web application enabling Carleton University students to collaborate, access, and share course materials, leading to improved academic performance
- Modeled the system using entity relationship diagrams, use-case diagrams, and Balsamiq sketches
- Used Next.js on the frontend, Node.js on the backend, MongoDB as a database, and Multer middleware to simplify the file upload process

- Implemented a secure user authentication system using JWT-Json web tokens, generating unique tokens for each user upon sign-in
- Adopted advanced password hashing algorithms utilizing bcrypt and salted hashes; enhanced security measures and safeguarded user passwords in the MongoDB database, ensuring data integrity and privacy

Web-CAT (Containerized Automated Grading tool)   **July 2023 – Sept 2023**

- Installed docker in virtual machine and configured docker image for optimal performance, meeting the requirements of the Web-CAT application
- Deployed Web-CAT, within Docker by integrating Apache Tomcat Server with Java Version 8 and a MySQL database
- Collected data/Information from various platforms to successfully author a comprehensive installation and configuration guides on Medium.com, providing a valuable resource for others in the community
- Demonstrated effective communication skills by sharing detailed step-by-step instructions and command-line examples
- Published [textual](#) and [video](#) documentation showing the process on Medium.com and YouTube

Denas pain reliever (Team Project)   **Carleton University**   **Jan 2020 – April 2020**

- Worked in a team of 4 developers to develop a C++ software program using OOP, QT framework, and Agile programming methodologies to design and implement a user-friendly shock therapy medical device prototype
- Designed system architecture using UML diagrams and created traceability matrix and provided functionalities like depletion of battery with the time of usage
- Distributed project tasks and tracked team progress using GitHub's project management tools, ensuring efficient collaboration and seamless communication within the team

[Shopify Challenge Frontend](#)   **May 2021**

- Built the web app using Next.js and Bootstrap to nominate 5 movies for a person by fetching data from the OMDB site through API (get requests)
- Provided functionalities like adding, disabling, buttons, and alerts so that users can nominate up to 5 movies at a time
- Deployed the app on Vercel app using GitHub's account

Interpersonal Skills

- Excellent communication skills, effectively conveying complex technical concepts to audiences with varying levels of technical expertise, while also fostering collaboration with teams to deliver projects successfully
- Solving Algorithms on **[Leetcode](#)** in my leisure time, 170+ solved and counting
- Committed to continuous learning and application of complex algorithms, data structures, and mathematical problem-solving to address real-world challenges and enhance technical expertise.
- Actively learning new skills through courses on various platforms like OpenAI and YouTube, like Prompt Engineering using OpenAI's library, API in Python
- Building web applications, like portfolio, web-portals in NextJS and Tailwind.css. Deploying them with various service like Azure, Github pages/Actions, and Vercel
- Applied leadership and team management approach for COMP1405 Python Study Group, which resulted in a more cohesive and knowledgeable study group, contributing to improved academic performance and a deeper understanding of Python programming concepts among participants
- As Executive Coordinator at CASI (Carleton Association of Students from India), helped in event planning, prioritized tasks, and executed scheduling. Demonstrated good time management skills in overseeing successful events for 250+ attendees while coordinating and prompting issue resolution
- Enjoying various hobbies, including competitive indoor/outdoor sports (Badminton, Soccer, Chess, Table tennis, Gym), Reading books, learning new skills, travelling and exploring new places