Gurpreet Singh

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Education

Queen's University Kingston, Ontario

*Bachelor in Computing and Mathematics (CGPA: **4.12 / 4.3**)* *Sept 2021 - Dec 2024*

- **Awards**: Dean's Honour List (2x), Annie Bentley Lillie Prize
- **Relevant Courses**: Algorithms, Data Structures, Evolutionary Optimization, Operating Systems, Computer Architecture, Discrete Mathematics for Computing, Advanced Calculus, Group Theory, Rings and Fields

Experience

Amazon June 2024 – Aug 2024

Software Development Engineer Intern *Vancouver, British Columbia*

- Worked with the Payment Acceptance team to migrate the SelectedPaymentMethod widget, used to display the chosen payment method on the checkout page to a new technology stack (React, Node.js, and TypeScript)
- Led the transition of the widget to render remotely on the server side, integrating payment API logic for parsing purchase documents & generating dynamic, display-ready string within the Payment Acceptance team's codebase
- Reduced API calls by **50%**, improved latency, and halved the steps required to launch new payment methods, streamlining the process and ensuring a consistent user experience

Amazon May 2023 – Aug 2023

Software Development Engineer Intern *Vancouver, British Columbia*

- Developed a Natural Language to TypeScript code translator on AWS SageMaker, utilizing a Large Language Model (LLM), Starcoder (15B params) from the Hugging Face library
- Employed Python and JavaScript to host, deploy, and integrate the model's logic into an existing AWS Lambda function, with React used for the user interface
- Successfully integrated Datapath-CodeStudio into Amazon's infrastructure using AWS SageMaker, Lambda, and API Gateway, leading to a significant **12-15%** efficiency improvement across a team of **100+** developers

Queen's University May 2022 – Dec 2022

Teaching Assistant *Kingston, Ontario*

- Worked as a Teaching Assistant for courses in Operating Systems and Software Specifications, managing a class of **30+** students
- Responsibilities included supporting the professor during classroom instruction, examinations, record-keeping, and various miscellaneous projects

Projects

Raspberry Pi Car | *(Python, OpenCV & React)* View Project

- Built a 4-wheel drive car that can be controlled wirelessly through a simple web interface using Raspberry Pi 3
- Added an object collision feature using ultrasonic sensors, using Python's GPIOZero library
- Equipped the car with a camera, allowing for remote control using the OpenCV library
- Developing a mobile app in Java that utilizes the phone's gyroscope for improved control

Sign Language Detector | *(Python, OpenCV, NumPy)* View Project

- Developed an application that displays Sign Language letters based on user hand gestures
- Utilized the Scikit-learn library to train RandomForestClassifier model, resulting in **88%** detection accuracy

Pac-Man | *(Python)* View Project

- Developed the classic Pac-Man arcade game using the Pygame library
- Implemented distinct behavior patterns for each ghost character, simulated intelligent movement through predetermined rules and responses to player actions
- Incorporated features such as power-ups, life tracking, game state management (game over and victory), and responsive keyboard event handling

Technical Skills

Languages: Python (Proficient), Java, C++, C, JavaScript, TypeScript, HTML/CSS, Haskell
Cloud Computing: Amazon Sagemaker, AWS Lambda, Amazon API Gateway
Mobile App Development: Android, iOS
Technologies: React, MySQL, IBM DB2, Oracle12c, Oracle 11g (PL/SQL)