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Deepan Chakravarthy

[GitHub] - [LinkedIn] - [Portfolio]

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EDUCATION

Vancouver, BC **University of British Columbia** **Expected May, 2024**

- **Major**: Computer Engineering, BASc (GPA: 82%)
- **Programming Coursework**: Algorithms & Data Structures, Operating Systems, Networks, Computer Vision
- **Hardware Coursework**: Digital System Design, Microcomputers, Embedded Systems, Assembly, Circuits

TECHNICAL SKILLS

- **Languages**: C#, C/C++, Java, Python, Verilog, ARM/x86 Assembly, HTML/CSS/JavaScript
- **Frameworks**: .NET 5, ASP.NET Core, MVC, SQL, Entity, MongoDB, TensorFlow, Pytorch, React
- **Technologies**: GIT, Unix, Docker, Kubernetes, Azure Cloud, Postman, xUnit

TECHNICAL EXPERIENCE

Image Recognition Team **AgroBot UBC** **August 2021 - Present**

- Performed **Transfer learning** to develop a wheat detection and classification model with 87% validation accuracy and 0.2 validation loss
- Integrated the ML model onto an **Edge device** to increase real-time inference speed by up to 80%
- Utilized: TensorFlow, Coral Edge TPU, Python, OpenCV, GIT, Google Cloud

PROJECTS

UNIX commands REST API (Back-End) **February 2022 – March 2022**

Personal Project [GitHub] – [DockerHub]

- Built a **REST API** that stores Unix commands and their descriptions
- Used MongoDB, DTOs, and **Asynchronous programming** (Async all the way) for efficient data access
- Used **dependency injection** and inversion of control principles to encapsulate data access and decouple controller from dependencies
- Followed the **Test Driven Development** (TDD) approach and performed unit testing and regression testing using xUnit and Postman to validate code
- Deployed using **Docker** and used **Kubernetes** to implement scaling of pods, self-healing, health probing and load balancing
- Utilized: C#, .NET 5, Async/await, RESTful APIs, Docker, Kubernetes, MongoDB, Postman, xUnit

Online Car Marketplace (Full-Stack) **January 2022 – February 2022**

Personal Project [GitHub] – [Website]

- Built an **ASP.NET Core MVC** Web Application for users to advertise used cars
- Used **Entity Framework ORM** (DBContext), Migrations, SQL Server for data storage and persistence
- Created entire frontend UI using HTML/JavaScript and Bootstrap CSS templates.
- Implemented **CRUD** operations, added REST API endpoints using AutoMapper to improve performance
- Added **Authentication & Authorization** (login system) and performed Client & Server-side Data Validation for security
- Deployed SQL database and application to **Azure Cloud** to enable remote access
- Utilized: C#, ASP.NET Core, MVC, SQL, Entity, Azure, HTML/JavaScript

Crypto Currency Tracker (Front-End) **December 2021-January 2021**

Personal Project [GitHub] – [Website]

- Created and deployed website that tracks Cryptocurrency market trends with the Coin Gecko API using **React**
- Utilized: ReactJS, CSS, Hooks (State/Effect), JavaScript, Azure Cloud

OS161 (Linux clone), Kernel Development **September 2021-December 2021**

Coursework: Semester long project

- Implemented crucial parts of the **kernel infrastructure** such as synchronization primitives, processes and file tables, system calls and virtual memory. Utilized: C, cscope, gdb, Virtual machine

AWARDS & AFFILIATIONS

- Deans Honor List (2019, 2020), UBC BOLT data analytics club, UBC Game development club