Manjot Saggu

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WORK EXPERIENCE

Meta (Contingent Worker via HCL Technologies) **Edmonton, AB (Remote)**
Software Engineer Intern June 2024 – December 2024

- Improved silicon test accuracy by implementing log-level validation with Python, enhancing detection of hidden errors in logs with zero-return codes and reducing false positives by 20%
- Optimized AutoVal's randomization and concurrency testing frameworks for PCIe and memory test plans, improving scalability and stability by 10% through Agile collaboration and Git/Sapling version control
- Developed deep learning algorithms and automated silicon workflows using Python in Linux, boosting efficiency by 5% and throughput by 8% through improved logging and categorization
- Designed and validated next-gen silicon systems by enhancing infrastructure readiness and triaging tools, reducing pre-silicon validation time by 10%

ATCO **Edmonton, AB**
Natural Gas Engineering Co-op Student Jan 2023 - Aug 2023

- Managed and executed 3 Integrity pipeline projects with a total value of $360K, delivering on-time completion and within budget, ensuring compliance with safety regulations and reducing leak risks by 75%
- Ensured successful completion of Integrity pipeline projects, worth $1.25M, utilizing software for in-depth analysis, data-driven decision-making, and cross-functional team collaboration for risk mitigation
- Developed and implemented a streamlined communication plan to convey technical information to multi-disciplinary teams, resulting in a 15% reduction in project delays
- Implemented a comprehensive file and database management system for engineering projects, utilizing SQL and Python programming, resulting in a 30% increase in data accuracy and efficiency

PROJECT EXPERIENCE

University of Alberta **Edmonton, AB**
Capstone Project: Smart Coffee Roasting Automation November 2024 – May 2025

- Designed and prototyped an embedded system to automate coffee roasting using PyTorch-based ML model, boosting production consistency by 15% through enhanced data collection and real-time analysis
- Developed a real-time data collection and analysis system with a web-based interface for remote monitoring, enabling smart recommendations through ML with a 5-second average response time
- Collaborated with a local client, Rogue Wave Coffee, to gather requirements, implement modular features for scalability with ML-driven adjustments to account for environmental variability

Highlighted Academic Projects Sep 2020 – May 2025

- Led a team of five to design and develop an Android application, utilizing object-oriented design principles, UML diagrams, and robust architecture for scalability and maintainability
- Designed CMOS circuits using VLSI techniques, modeling delays and optimizing power efficiency in advanced digital logic. Simulated and built logic circuits, finite state machines, and an 8-bit CPU using VHDL and CAD tools, enhancing design accuracy and efficiency
- Implemented AI techniques for pathfinding, decision-making, and procedural content generation in Unity, optimizing state-space search and multi-agent planning for real-world and game applications

EDUCATION

University of Alberta **Edmonton, AB**
Computer Engineering, BSc Co-op Graduated: April 2025

SKILLS AND INTERESTS

Programming: Python3, C/C++, C#, MATLAB, Java, SQL, VHDL, UNIX | Design: Git, AutoCAD, Cadence
MS Office Suite | Languages: Fluent English, Punjabi | Interests: MMA, weightlifting, golf, basketball, guitar