Theeraj Chandra

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Education

University of Waterloo Sep 2022 – Apr 2027
Bachelor of Applied Sciences in Computer Engineering

- Relevant courses: Real-time OS, Data Structures and Algorithms, Systems Programming and Concurrency

Technical Skills

Languages: Python, C, C++, TypeScript, MATLAB, Verilog, VHDL
Developer Tools: Azure DevOps, Jenkins, Postman, Vite, Chrome DevTools
Libraries & Frameworks: React, PyTorch, OpenCV, Tensorflow, pandas, Angular, Next.js, Vue.js

Experience

Software Engineer Intern | *React.js, TypeScript, Material UI* Jan 2025 – Apr 2025
SuperWorld Inc. *Miami, FL*

- Engineered a geolocation-based **virtual check-in** feature for SuperWorld Map using the Haversine formula algorithm, enabling users to authenticate location proximity within a 300m radius, thus enhancing user engagement through location verification.
- Played a key role in developing our proprietary **conversational AI interface** powered by Meta LLaMA 3, enhancing user retention through personalized map interactions, persistent chat history, and intuitive mobile-first UX, thus growing active user-base by 36%.
- Developed a React/TypeScript dashboard with Material UI that displays real-time KPIs through asynchronous API integration using Axios, implemented parallel Promise-based data fetching, and created interactive Recharts visualizations with dynamic time-range filtering.

Connected and Autonomous Vehicle Developer | *C++, Python, OpenCV* Nov 2024 – Jan 2025
UWaterloo Alternative Fuels Team(UWAFT) *Waterloo, ON*

- Gained hands-on experience with **sensor fusion**, **object detection**, and vehicle-to-everything (**V2X**) communication technologies to enhance safety and automation
- Contributed to the development of a camera-based driver attentiveness detection system using **OpenCV** and **TensorFlow** focused on monitoring driver behavior and detecting inattentiveness.

QA Analyst Intern | *Azure DevOps, Perl, Postman* Jan 2024 – Aug 2024
First National Financial LP *Toronto, ON*

- Developed **Python** and **Perl** scripts to automate pooling target validation and improve testing processes, ensuring higher reliability and reducing manual efforts by **30%**
- Automated regression tests, increasing testing efficiency by **40%** and reducing bug resolution time by **15%**
- Tested mortgage broker tools for BMO, TD, and Manulife on staging and QA environments, performing **regression**, **UAT**, and **exploratory** tests to validate functionality and client-specific requirements
- Performed **API testing** on Merlin Mobile with **Postman** to verify internal system integration and data retrieval, collaborating with developers on defect resolution

Projects

FPGA Matrix-Vector Engine | *SystemVerilog, Vivado, FPGA, Testbench* July 2025

∗ Designed and implemented an 8-lane pipelined matrix-vector-multiplication engine in SystemVerilog, including an 8×8 dot-product adder tree with DSP48 macros, dual-port BRAM interfaces, and a control FSM; achieved 150 MHz timing closure on FPGA and validated functionality with comprehensive unit and top-level testbenches

WebVision | *C, cURL* Oct 2024

∗ Developed a C-based **multi-threaded Web Crawler** using pthreads and synchronization primitives (mutexes, semaphores) to extract unique PNG URLs, reducing processing time by **20%**