CELENE CHEN

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EXPERIENCE

EMBEDDED SOFTWARE ENGINEER
Evertz Microsystems

📅 Aug 2020 – Aug 2022 📍 Burlington, Ontario

- Developed firmware features and optimized design for over **14** products on the latest broadcast equipment and solutions;
- Managed projects with **Confluence** and **JIRA**, **SVN** and **Git** for version control, **Jenkins** for CI/CD;
- Monitored and tested devices with network management protocols such as **IGMP** and **SNMP**;

SOFTWARE ENGINEER - PERCEPTION
WATonomous

📅 Jan 2019 – Jan 2020 📍 Waterloo, Ontario

- University of Waterloo's autonomous vehicle team working towards level 4 autonomy;
- **Camera Calibration:** Performed image rectifications, perspective transform, depth map development, intrinsic calibration in **OpenCV**;
- **Lane Detection:** Stop line detection, tracking using image processing;

MACHINE VISION SYSTEMS DESIGNER INTERN
Taymer International Inc.

📅 May 2019 – Aug 2019 📍 Markham, Ontario

- Designed and implemented a multi-camera system on NVIDIA Jetson TX2 in **C++** and GUI via **Qt** in **embedded Linux** environment;
- Evaluated and optimized real-time performance of algorithms and identified bottlenecks for hardware performance and testing;
- Interfaced common hardware protocols **(GPIO, I2C, SPI)** for camera synchronization and external encoder implementation;
- Increased frame rate by **45%** through **multi-threading**;

SOFTWARE DEVELOPER INTERN
ATS Automation Tooling Systems

📅 Sept 2018 – Dec 2018 📍 Cambridge, Ontario

- Sped up daily reconciliation report from **40 minutes to under 30 seconds** through improved algorithms and tools in **Java**;
- Developed data visualization tools used for management and forecasting decisions
- Built **web text scraper** tool to extract data from existing websites used for further data manipulation in **VBA**

RELIABILITY ENGINEER INTERN
IKO Industries

📅 Dec 2017 – Apr 2018 📍 Brampton, Ontario

- Led a team of three in the development of two platforms for report automation which reduced work time from **8 hours to 15 minutes**;
- Improved accuracy and latency of the project by automating and combining workflow of 7 different tasks;
- Assessed criticality ranking of existing **Failure Modes** and identified **Root Causes** of defects to develop Predictive, Preventive, Condition Based Maintenance Strategies to prevent and reduce possible failure;

EDUCATION

MEng in Computer Engineering
University of Toronto

📅 Sep 2022 - Jun 2024 (Expected)

- Robot Perception
- Digital Image Processing
- Parallel Programming

BASc in Mechatronics Engineering
University of Waterloo

📅 Sep 2015 - Jun 2020

- Data Structures and Algorithms
- Machine Intelligence
- Computer Structures & Real-Time Systems

PROJECTS

Smart Security Camera
- An IoT **Raspberry Pi** security camera running **OpenCV** that sends an email with an image if a motion has been detected

Autonomous Search&Rescue Robot
- An autonomous multi terrain robot interfaced with **IR, IMU, TFmini LiDAR sensors** and **optical encoders**

Marble KOMBAT
- A shooting game programmed in **C** using Keil MCB1700 Evaluation Board

N-body Simulation
- A simulation which predicts gravitational trajectory of objects using **MATLAB**

iSCORE
- A music score translator using **Lego Mindstorms NXT2.0**

TECHNICAL SKILLS

SOFTWARE

- C/C++
- Python
- SQL
- Java
- HTML/CSS
- MATLAB/Simulink
- Bash
- VBA

HARDWARE

- Jetson TX2
- RaspberryPi 3
- Arduino/Teensy
- ARM

OTHERS

- Git
- AutoCAD
- SOLIDWORKS
- ROS
- Qt
- Visual Studio
- OpenVINO
- Linux