Julien Serbanescu

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Skills

Programming Languages: Python, C++, C, Java, JavaScript, MATLAB, R, Dart, VHDL

Frameworks & Libraries: PyTorch, TensorFlow, React, Flask, Flutter, Streamlit, Pandas, NumPy, Matplotlib, OpenCV, MediaPipe, NLTK, Selenium, SkLearn

Tools & Technologies: Git, Docker, Linux (Kali, Ubuntu), JupyterLab, Google Colab, VS Code, IntelliJ, Vivado

Hardware & Systems: Raspberry Pi, Arduino, ESP8266, KC868-A4, FPGA

ML/AI Techniques: Neural Networks, CNN, GAN, Linear and Logisitc Regression, SVM, Decision Trees, Gradient Boosting, Data Science

Soft Skills: Leadership, Project Management, Communication, Problem-solving, Teamwork/Collaboration, Innovation/Creativity, Technical Communication, Mentoring

Education

Computer Engineering Co-op Major, Entrepreneurship Minor Sep 2023 – May 2028

University of Guelph; ***GPA: 92%*** *Guelph, ON*

- **Relevant Coursework:** Data Structures and Algorithms (92%), Software Development and Integration (In Progress), Digital Systems Design (94%), Object Oriented Programming for Engineers (98%)

Publications

SIGIR-AP 2024 Approved Submission Sep 2024

UnAnswGen: A Systematic Approach for Generating Unanswerable Questions in Machine Reading Comprehension *Guelph, ON*

Experience

AI Research Internship May 2024 – Aug 2024

University of Guelph, USRA: Machine Reading Comprehension Data and Model Training *Guelph, ON*

- Undergraduate Student Research Award (USRA) research position, collaborating remotely with master's students on publications. Utilized various NLP methods such as **NLTK** and **SpaCy** in Python to generate unanswerable questions, producing **944,326 candidate** questions and refining them into a final dataset of **130,319 instances**
- Designed and implemented a **multi-task learning (MTL)** AI model for classification and generation, **outperforming baseline generative models by 6%** for unanswerability detection and answerable generation, documenting effectiveness

AthenaGuard CTO and Cofounder Aug 2024 - Mar 2025

AthenaGuard *Guelph, ON*

- Trained **classification models** achieving **87% accuracy** for phishing detection, and developed a **Flask** web application with **OAuth** login and SMS detection through a Flutter Android implementation
- Built and deployed multiple minimum viable products including a mobile app (Android APK) and desktop application (Windows EXE) for cybersecurity threat detection and testing

Organizations

Guelph AI Club Technical Lead and President Jan. 2024 – Present

University of Guelph *Guelph, ON*

- Presented workshops and demonstrations on key AI libraries, including **Sklearn, Hugging Face, and PyTorch**, using **Google Colab** and **Kaggle** for live data handling and practical applications
- Developed interactive sample code to aid beginners in learning AI/ML concepts, mentored problem-solving techniques in **Python**, and educated **20+ members** on the ethical implications of AI

Guelph CyberSecurity Club Jarvis AI Project Lead Jan. 2024 – Mar. 2024

University of Guelph *Guelph, ON*

- Led a team to develop an AI assistant inspired by *Jarvis* from *Iron Man*, ensuring high-quality and ethical standards while integrating the **OpenAI API** for intelligent responses. Implemented **Google's SpeechRecognition** for voice commands, a text-to-speech system, and text-based error handling
- Automated tasks like application control and online searches using **Mediapipe** and **OpenCV**, enabling interaction through hand gestures. Successfully showcased and Presented the project at the **IBM Toronto Tech Expo (TTE)**

University of Guelph Robotics Team Software Subteam Leader Sep. 2023 – Present
University of Guelph *Guelph, ON*

- Leading a team of **10 members** in the software development of a robot for a Canadian rover contest, coordinating with electrical and firmware sub-teams while managing tasks, version control (**GitHub**), and project organization
- Developing robotics software using **Docker** and **Linux**, implementing **Python**-based control for Webots simulations, and utilizing **OpenCV** and **YOLO** for image processing and obstacle detection. Regularly documenting and Presenting progress to maintain team synchronization

Projects and Competitions

Crack The Code, CyberSci Regionals | *Splunk, Kali Linux, OpenVPN, Burpsuite, htop* Nov 2024

- Crack The Code Ontario and CyberSci Regionals: Identified cyber threats using Splunk's **Search Processing Language (SPL)**; Used **Kali Linux** with **OpenVPN**, **htop**, **BurpSuite**, and Linux commands to detect hidden information and malicious files, achieved**14th**and **10th**

Hackathon Projects Mar 2024 - Mar 2025

- **HackTheNorth:** Built a web app using **Dynamsoft, Groq, ExaAI, Flask, and Flowbite** to scan NDC codes and provide medicine information, working on backend, delegating frontend and bridging
- **GDSC Guelph:** Developed a Chrome extension with **TensorFlow, JavaScript, Gemini API, and Flask** to offer AI-based LinkedIn insights, a focus on bridging and model development
- **GenesisAI 2024:** Created a software assistant using **PyTorch, Transformers, Django** to support the elderly and combat loneliness
- **DeltaHacks XI:** Constructed a software that scans garbage using **Roboflow, YOLO, Streamlit and OpenCV**, and gives the proper recycling category and reusability methods using **OpenAI API**, using a **ReactJS** frontend, leading the team to integrate everything together and advising on best practices
- **GenesisAI 2025:** Created a Model Context Protocol (MCP) server using **Python, Cohere, and Pinecone** with a **ReactJS** frontend dashboard for configuring and managing academic research projects

GAN to Generate Soccer Jerseys | *PyTorch, Matplotlib, Selenium* Feb 2024

- Used **PyTorch** to create generator and discriminator networks, created the dataset from web scraping images of soccer jerseys, making the networks using **Conv2D, Conv2DTranspose,** along with **tanh** and **sigmoid**

Certificates

Kaggle Certificates May 2021 – present
Earned individual certificates in:

- Machine Learning, Deep Learning, Pandas
- Time Series, Feature Engineering, Computer Vision

Google Cloud March 2025
Earned individual certificates in:

- Big Data and Machine Learning Fundamentals

Care AI Certificate Dec 2023
Introducing Artificial Intelligence: The Road Ahead

SOLIDWORKS CAD Design Associate Mar 2025