Akshat Sharma

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EDUCATION

University of Windsor   **Jan. 2021 - April 2024**

Bachelor of Computer Science Honours

- Relevant coursework: Data Structures and Algorithms, Operating Systems, Artificial Intelligence, Numerical Analysis, Compiler Design
- Minor: Mathematics
- Specialization: Artificial Intelligence

TECHNICAL SKILLS

Languages: C, C++, Python, Java, Matlab, Go, C#, SQL, JavaScript, HTML/CSS
Frameworks: React, Node.js
Developer Tools: Git, Docker, VS Code, MSVC Build tools, Android Studio, SQLite, MySQL
Libraries: NumPy, Matplotlib, TensorFlow, Keras, Sci-ki Learn, Boost, ImGui, OpenCV

EXPERIENCE

Undergraduate Research Assistant and Developer   Jan 2023 - Present

Institute of Diagnostic Imaging Research   *Windsor, ON*

- Conducted interdisciplinary research in deep learning (AutoEncoders, GANs, U-Nets) for Non-Destructive Ultrasound Evaluation, under **Dr. Roman Maev** and **Dr. Ryan Scott**.
- Collaborated with **Tessonics** on deep learning model development in **TensorFlow**; curated datasets, and developed Python scripts (using **OpenCV**, **NumPy**, **Matplotlib**) for ultrasound image analysis in resistance spot weld evaluation.
- Developed **C++** applications to integrate deep learning models into the **RIWA** software platform.
- Engineered a real-time event detection algorithm in C++ that processes data from a Hall effect sensor, achieving results transmission with a minimal delay window of as low as 10 ms.
- Implemented interprocess communication using **Boost** (C++) to bridge 32-bit and 64-bit processes for sound physics algorithms, integrating new AI into a market-existing product.
- Designed multiple GUI managers using **ImGui** and some in-house libraries in order to modify config files with ease, also aided in creating scripts in order to create databases in **MySQL**.

Teaching Assistant   Sep 2022 - Present

University of Windsor   *Windsor, ON*

- Taught and conducted labs for courses: **Intro to Algorithms(C programming)**, **Systems Programming**, **Discrete Mathematics**, **Intro to Web development**.
- Conducted weekly labs with 40+ students in order to help them with assignments, aid in preparation of exams and explain concepts with supplementary material, resulting in improvements throughout the semester.
- Hosted weekly office hours in order to conduct 1 on 1 sessions with struggling students.

PROJECTS

CIFAR-100 Analysis | *Python, Tensorflow, Keras, NumPy*   Nov 2023 - Dec 2023

- Led a research team in an advanced AI concepts class to explore cutting-edge deep learning techniques, culminating in a perfect score of 100% for the project.
- Developed and applied a range of deep learning models using Python, including **Dense Neural Networks** and **Convolutional Neural Networks**. Innovatively integrated **Transfer Learning** with **ResNet-50** for efficient and accurate classification of the CIFAR-100 dataset.
- Focused on the detailed analysis and optimization of the **CIFAR-100** dataset, a benchmark in computer vision studies, enhancing model accuracy and gaining deeper insights through sophisticated data processing techniques. Achieved a high accuracy of 80% with our limited hardware, which is very difficult to obtain for this dataset.

VOLUNTEER AND AWARDS

Computer Science Society: Event Coordinator 2023-2024
Dean's Honour Roll Recipient: 2021,2022,2023