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## OBJECTIVE

I am currently pursuing a Master's degree in Applied Computer Science at Concordia University and seeking opportunities to grow, excel, and make a meaningful impact in the field of computer science.

## EDUCATION

**CONCORDIA UNIVERSITY | Montreal, QC** **September 2022 - Present**
Masters in Applied Computer Science (MApCompSc)

**L.J. Institute of Engineering and Technology | Ahmedabad** **June 2018 - May 2022**
**(Affiliated with Gujarat Technological University)**
Bachelors in Computer Engineering
**CGPA: 9.72/10**

## WORK EXPERIENCE

**Notionmind Pvt. Ltd., Ahmedabad, Gujarat** **31st January 2022 – 22nd April 2022**
***Python Intern***
- Implementing image pre-processing techniques using OpenCV for enhanced data quality.
- Utilizing convolutional neural networks (CNNs) for advanced feature extraction in images.
- Applying machine learning algorithms from the sklearn library for model optimization.
- Developing an end-to-end deep learning solution for image similarity detection.
- Employing Tensorflow and Keras frameworks to design, train, and validate custom deep learning models.

**IITD-AIA Foundation for Smart Manufacturing** **25th May 2021 – 5th August 2021**
**Indian Institute of Technology, Delhi**
***Machine Learning Intern***
- Developed Industry 4.0 compatible solutions for lathe machines and implemented fault prognosis and classification using machine learning techniques for online tool condition monitoring.
- Designed a web application to display real-time statistics and data visualizations of lathe machine states.

**BrainyBeam Technologies Pvt. Ltd., Ahmedabad, Gujarat** **26th May 2021 – 15th June 2021**
***Data Science Intern***
- Improved data gathering techniques and utilized machine learning to select features, develop, and optimize classifiers.
- Processed, cleansed, and verified data integrity for analysis, creating clear presentations of results using various data visualization techniques.
- Developed automatic anomaly detection systems and regularly monitored their performance.

**Vinculum Solutions Pvt. Ltd., Ahmedabad, Gujarat** **9th November 2020 – 2nd April 2021**
***Python Intern***
- Collaborated with the design team to understand end-user requirements and delivered technical solutions for performance tuning, improvement, balance, usability, and automation.
- Ensured proper functioning of active programs by working on the server side, updating existing programs, resolving errors, and creating new programs.

## PROJECT WORK DETAILS

**Project Name: License Plate Recognition (Console-based Application)**

- The current issue is that, despite the installation of RFID FASTAG on cars, vehicle movement in TOLL lanes is extremely slow. Fuel wastage and waiting time at TOLL queues are still challenges.
- The primary goal of this project is to provide an efficient method of character recognition.
- The approach used to segment the images is Connected Component Analysis (CCA).
- Car Image -> Grayscale Image -> Binary Image -> Applying CCA to get connected regions -> Detect license plate from all connected regions.
- The identified license plate image is sent into step 2, where CCA is used to bind the characters in the plate and the model is trained using SVC (4 cross fold validation).

**Project Name: Chess-AI (Cross-Platform Application)**

- The goal of the "Chess-AI" project is to create an AI model that can compete with humans by analyzing all the potential movies that humans can make up to a specific level of depth.
- As it traverses the search tree and determines the best move to be played against humans, the AI model generated assumes the best play from both sides. To limit the number of positions traversed, this script employs artificial intelligence techniques such as Alpha-beta Pruning, Transposition Table, and Opening Book.
- The number of depths can be raised by increasing CPU and GPU utilization, which will improve the evaluation function. The project is presently in the development stage, and numerous methods need to be updated in order to improve the script.

**Project Name: Contactless Attendance System (Console-based Application)**

- This repository was developed as part of the MINeD Hackathon, an international hackathon conducted by SUNY Binghamton University's Centre of Excellence in Data Science.
- The fundamental goal of this work is to help minimize processing errors by employing facial recognition technology to create an automated and efficient attendance system.
- Facial recognition technologies such as Haar Cascade and LBPH (Local Binary Pattern Histogram) were implemented in VS Code using Python v3.8 with OpenCV-Contrib, Numpy, and Pandas.
- The primary objective was to extract usable features from the Face Identified and categorise those traits such that the face detected can be recognised.

**Project Name: YouTua (Cross-Platform Application)**

- YouTua is a graphical user interface (GUI) program that allows you to download videos and playlists from a variety of supported websites. It is set up to download videos in a variety of codecs, including mp4, mkv, and webm, and in a variety of quality levels, ranging from 144p to 2160p (4K).
- The core program, extractors, downloaders, and post-processors, are the four modules that make up the software. Each module is important, since it addresses different objectives and, when combined, downloads the multimedia from the supplied destination URL.
- The software also includes FFmpeg, a free and open-source software project that includes a set of libraries and tools for processing video, audio, and other multimedia files.
- There have been over 500 downloads globally for all releases on the GitHub Platform.

## SKILLS

- Strong grasp of programming languages, including **Python, Java EE, C and C++** as well as experience with backend technologies.
- Hands-on experience with numerous **Python libraries**, including **TensorFlow, Scikit-Learn, Numpy, Keras, SciPy, Pandas, OpenCV, Plotly, Seaborn, NLTK, spaCy, and more**.
- Ability to effectively communicate complex technical concepts to students with varying levels of experience and understanding.
- Demonstrated ability to work well with others and provide guidance and support to peers in a collaborative environment.

## SPECIALIZATIONS AND CERTIFICATIONS

- **Python Data Structures – *University of Michigan***
- **Programming for Everybody - *University of Michigan***
- **Microsoft AI Classroom Series – *Microsoft***
- **MATLAB OnRamp – *MathWorks***
- **Machine Learning OnRamp - *MathWorks***
- **Python for Data Science – *Cognitive Class by IBM***
- **Data Analysis with Python – *Cognitive Class by IBM***
- **Data Visualization with Python – *Cognitive Class by IBM***
- **Machine Learning with Python – *Cognitive Class by IBM***
- **Diploma in Multilingual Computer Programming – *C-DAC India***

## CO-CURRICULAR ACTIVITIES AND ACHIEVEMENTS

**GitHub**

- Since 2019, I have actively contributed to numerous open-source repositories, spanning a diverse range of projects. I participated in Hacktoberfest in both 2020 and 2021, further showcasing my commitment to the open-source community. My profile has garnered over 8,500 views, and my repositories have attracted more than 300 stargazers. My work is well-regarded within the community, as evidenced by the frequent forks and collaboration from fellow contributors.

**Student Open Innovation Challenge (SOIC by SSIP-Gujarat)**

- My team provided a solution to one of the existing problem statements in this startup challenge hosted by Student Start-up and Innovation Policy, and was chosen as well as financed throughout the process by SSIP Gujarat.

**KPIT Sparkle**

- The i-Innovate contest, sponsored by KPIT Sparkle, features a systematic innovation process laid out for students to follow and learn via the creation of an immersive product or service. This platform allows users to validate their business hypothesis by putting it to the test. My team offered a solution to one of the existing problem statements, and was chosen and financed by KPIT Sparkle throughout the process.

**Google Coding Competitions**

- Participated in several Google Coding Competitions, including Code Jam, Hash Code, and Kick Start, and achieved ranks below 2000 in multiple levels.

**Smart Gujarat for New India Hackathon** **27th – 28th February 2020**

- My team took part in the "Smart Gujarat for New India Hackathon," a state-level hackathon organized by SSIP-Gujarat, in which we developed MLM (Multi-level Marketing) software with all the functions and features required by a business. We had 36 hours to complete the provided problem statement, and we made it to the State Final Round after clearing two levels.

**L.J. Innovation Village 2020** **7th – 8th February, 2020**

- I participated in a "Student Start-up" Hackathon as a team leader, where I presented 5 different innovations/ideas and answered questions from professionals who examined the 350 proposals submitted for the hackathon. One of my inventions was chosen as one of the top five innovations, and the Director of the L.J. Institute of Engineering and Technology complimented it.

**L.J. Innovation Village 2019** **7th - 8th February, 2019**

- I took part in a "Student Start-up" Hackathon as a team leader, where I presented a project and answered questions from the professionals who examined the over 400 proposals submitted for the hackathon. My proposal was chosen as one of the top ten inventions and was later chosen by investors for startup investment.