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LinkedIn Profile

INTRODUCTION

I am a dynamic and motivated engineering student currently pursuing my undergraduate degree in Computer Science and Engineering at the Vellore Institute of Technology. I am very interested in AI in healthcare, Machine Learning, Deep Learning, Big Data, and Cybersecurity projects, and have been an active participant in courses and events focused on these topics. Now, with a desire to further my education, I am ready to embark on the journey toward my master's degree

EDUCATION

- **Vellore Institute of Technology** *2020-2024*
  Bachelor of Technology in Computer Science **CGPA: 8.03/10**
- **St. Xavier's School, Jawalakhel, Nepal** *2017-2019*
  School Leaving Certificate (+2) **GPA: 3.29/4**

RESEARCH PROJECTS

- **Design and development of a Medical Analysis Toolkit with Digital Mask Recognition**
  Awaiting Publication

  The study incorporates a text summarizing module that pulls information about COVID-19 from various news channels' RSS Feeds. The program compresses and analyzes acquired textual input using LSTM networks. The Encoder-Decoder Mechanism's capabilities are expanded with the addition of a mask detection module using Convolutional Neural Networks (CNNs). This project has the potential for applications like automatic mask adherence monitoring in CCTV footage, reducing the need for ongoing human supervision and increasing compliance with mask regulations. The techniques and insights given have a long-lasting impact despite the COVID-19 pandemic's waning. Encoder-Decoder Mechanism, LSTM, and CNN together create a flexible framework for various settings. The results of this study hold the potential for effective information distillation and regulation conformity in an ever-changing environment as nations navigate the post-pandemic world. Research Paper Link

- **Enhancing Traffic Management and Privacy through Siamese Networks and Real-Time Analytics**
  Ongoing Research Project

  This research project aims to develop an advanced traffic management system that combines real-time traffic analysis, privacy preservation, and federated learning. Utilizing Kafka for data conversion, Siamese networks for traffic analysis, and Apache Druid for analytics. Intending to provide users with up-to-date traffic information while respecting their privacy through federated learning techniques.

WORK EXPERIENCE

- **Gaur Municipality** *Rautahat, Madhesh Province*
  Data Analyst Intern Mar 23-Aug 23

  – Collaborated with various municipal departments to gather and analyze data related to citizen services, identifying trends and patterns to enhance overall service efficiency.
  – Collaborated with the communications team to analyze social media and online engagement data, providing insights into public sentiment and optimizing digital communication strategies.
  – Collaborated with the public health department to analyze dengue-related data, including reported cases, geographical distribution, and demographic factors, providing insights to inform targeted prevention and intervention strategies.
  – Provided regular reports and presentations to municipal leadership, translating complex data into actionable insights to guide decision-making and resource allocation for improving public services, addressing community needs, and for effective public health management.

PROJECTS

Predicting-Body-Mass-Index-BMI-Using-Machine-Learning-Algorithms

Led an individual machine learning project focused on predicting Body Mass Index (BMI). I meticulously navigated through a modest dataset, enhancing its value through essential preprocessing tasks and employing SMOTE for effective balancing. The project's extensive exploration of various algorithms revealed the commendable performance of Logistic Regression, Random Forest Classifier, and XG-Boosting, particularly in terms of impressive recall scores. This endeavor highlighted the crucial aspects of meticulous data preprocessing, strategic feature selection, and judicious algorithm choices, showcasing the delicate balance between model complexity and computational efficiency. Link

A Job Portal for Physically Challenged People

Jobility's main objective is to make it easier for people with physical limitations to get employment so they can live independent lives. By linking them via the internet, the platform also aims to close the gap between companies and job seekers, allowing employersto hire diligent and deserving people. Link

Imbalanced Breast Cancer Classification Using Federated Learning

In this project, I use the popular EfficientNet-B0 as the base model and complement it with several state-of-the-art techniques to improve the overall performance of the system. With the ImageNet dataset taken as the source domain, we apply the learned knowledge in the target domain consisting of histopathological images. With experimentation performed on a large-scale dataset consisting of 277,524 images, we show that the framework proposed in this paper gives superior performance to those available inthe existing literature. Through numerical simulations conducted on a supercomputer, we also present guidelines for work in transfer learning and imbalanced image classification. Link

TECHNICAL SKILLS

Expertise: Research, Machine & Deep learning, AI for Healthcare, Computational biology, Computer Vision, Image Processing, Federated Learning, Information Security, Data Structures and Algorithms, LLMs, and Automation

Languages: Python, R, Java, C, C++, HTML/CSS, JavaScript, Matlab, SQL, PHP, cURL, Shell, Bash

Developer Tools: VS Code, Anaconda, PyCharm, Cloud (Azure/GCP/AWS), Docker, Git, Tableau, PowerBI

Technologies: Ubuntu, Kali Linux, MacOS, QEMU, VirtualBox, Cisco Packet Tracer, Wireshark, MongoDB, ChatGPT/Bard, DataBricks, Microsoft Office

Frameworks: Tensorflow, PyTorch, Keras, YOLO, Scikit-learn, OpenCV, Fastai, TensorFlow Federated, Apache Kafka, Apache Druid, ONNX, Flask, Django, Dash, Streamlit

Softskills: Leadership, Management, Teamwork, Communication, Creative thinking, Analytical and problem-solving

LEADERSHIP / EXTRACURRICULAR ACTIVITIES

- Served as a Core Committee Member in various chapters within IEEE. During this period, guided several peers in their projects, took several technical sessions, and conducted reviews of the projects of the members of the chapter.
- Participation in Multiple Hackathons - Smart India Hackathon, multiple VIT internal Hackathons.
- Engaged in freelancing during the COVID-19 pandemic, expanding expertise while adapting to remote work opportunities.
- Highly enthusiastic about Swimming, Singing, Football, and Cricket.

AWARDS

- **STUDY IN INDIA Scholarship:** Awarded a merit scholarship of 12,000 USD for undergraduate studies.
- **MUN/Debate Achievements:** Participation and victory in numerous national and international Model UnitedNations, debate, and extempore events.
- **Volunteering and Community Service Awards:** Awarded by various Governmental organizations & NGOs foroutstanding contributions to volunteering and community service.
- **Science Fair Award:** Secured the position of First Runner-Up in an inter-school science fair, surpassing over 20participating schools (Grade 12)