Praveen Raj

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EDUCATION

Stony Brook University **Aug 2022 – May 2024**
Master of Science, Computer Engineering *Stony Brook, NY*
Relevant Coursework: Computer Vision, Big Data Analytics, Fundamentals of Machine Learning

Vellore Institute of Technology **Jul 2018 – Jun 2022**
*Bachelor of Technology, Computer Science - **8.64/10*** *Andhra Pradesh, India*
Relevant Coursework: Design and Analysis of Algorithms, Operating System, Artificial Intelligence

TECHNICAL SKILLS

Languages: Python, Java, C++, JavaScript, HTML, CSS, SQL, PHP, MATLAB, R, TypeScript
Data Science & AI: TensorFlow, PyTorch, Keras, OpenCV, Apache Hadoop, PySpark, LangChain, Pinecone
Web Frameworks: React, Node.js, Vue.js, Next.js, Three.js, TailwindCSS, Express, Angular, Prisma
Big Data & Cloud Technologies: Google Cloud Platform (GCP), AWS, Azure, Docker, Kubernetes, Kafka, SQL, MongoDB, Firebase, PostgreSQL, Hadoop, Spark

EXPERIENCE

Stony Brook University **Jan 2024 – Present**
Graduate Teaching Assistant *Stony Brook, NY*

- Developed and graded over **100+ assignments and exams**, enhancing student understanding and academic performance
- Provided **one-on-one tutoring** to 20+ students weekly, significantly improving their grasp of complex **Object-Oriented Programming** Concepts
- Collaborated in the creation of comprehensive course materials and interactive lectures, benefiting **100+ students each semester**

Society for Health and Medical Technology **Jan 2022 – Jul 2022**
Data Science Intern *Noida, India*

- Developed a **BERT-based** chat-bot to address patient inquiries, reducing response time by **30 percent**, using **Keras** and **TensorFlow**
- Engineered an online Disease Predictor using **ResNet-50** and **transfer learning**, enhancing diagnostic accuracy by **15 percent** for early disease detection
- Automated the collection of extensive training datasets using **Selenium**, enriching the Disease Predictor's database by **over 10,000 diverse patient records**

PROJECTS

Best CPC Score: A Cardiac-Arrest Recovery Predictor | PyTorch, PySpark, Docker **May 2023**

- Developed novel regression models with **PyTorch** for continuous EEG data analysis, predicting patient recovery with high accuracy, enhancing the **Cerebral Performance Category** Score assessment
- Applied Hypothesis Testing to identify **Statistical Similarities** in patient EEG data, supporting targeted treatment strategies.
- Enhanced patient matching speed by **200 %** using **Locality Sensitive Hashing** with **PySpark**, optimizing 72-hour EEG data processing.

Brain Tumor Detection using Deep Learning | Python, Keras, TensorFlow **Jan 2022**

- Designed and implemented a **UNet-based** Deep Learning model for accurate brain tumor detection, achieving a testing accuracy of **90 Percent**
- Utilized **4-Flair MRI** images as inputs, generating precise **Tumor Location Masks**, streamlining diagnostic processes.

Diabetic Retinopathy Diagnosis | Python, Keras, Flutter **Jun 2021**

- Developed a modified **VGG16** and **Transfer Learning** based model for Diabetic Retinopathy diagnosis, achieving **92 % binary** and **87 % multi-class** validation accuracy.
- Enhanced **Diagnostic Precision** for Diabetic Retinopathy, facilitating **Early and Accurate** patient treatment planning.

Prototyping with Raspberry Pi in Healthcare Domain | R, Python, Matplotlib **Oct 2020**

- Conducted an extensive **R-based** analysis on Raspberry Pi applications in healthcare, identifying **cost-effective solutions** for remote patient monitoring and data collection.