CHETAN SAI BORRA

College Station, TX | 979-575-9026 | sai311235@gmail.com | GitHub | LinkedIn

OBJECTIVE

To secure an internship in **Machine Learning**, **AI**, where I can apply my skills in **deep learning** and **computer vision** to contribute to innovative, real-world solutions in autonomous systems and intelligent technologies.

EDUCATION

TEXAS A&M UNIVERSITY, COLLEGE STATION, TX — Texas, USA
Master of Science in Computer Engineering, **GPA: 4**. — Aug 2024 - May 2026
Coursework: **Machine Learning**, AI Robotics, **Reinforcement learning**, **Computer Vision & Robot Perception**.

VELLORE INSTITUE OF TECHNOLOGY — Vellore, India
Bachelor of Technology in Electronics & Communication Engineering, **GPA: 3.61/4**. — Aug 2020 - May 2024
Coursework: **Robotics and Automation**, Control Systems, IOT Domain Analyst, Digital Signal Processing.

TECHNICAL SKILLS

Programming Languages: **Proficient in Python**, MATLAB, C++, Java, MySQL.
Software & Tools: Jupyter Notebook, Anaconda, GitHub, Microsoft 365, Google Colab, VS Code, **Linux**, **CUDA**, LM Studio.
Machine Learning: Pytorch, TensorFlow, Keras, Scikit-learn, **OpenCV, Hugging face Transformers**.

EXPERIENCE

VELLORE INSTITUE OF TECHNOLOGY — Vellore, India
Research Assistant — Dec 2023 – May 2024

- Engineered **W-Net and U-Net architectures** for brain tumor segmentation in MRI images and Computer Vision, achieving over **90% accuracy** and enhancing delineation of tumor regions in BraTS 2020 Dataset.
- Optimized tumor boundary detection, attaining a high **Mean Intersection Over Union** (**Mean IOU of 72%)** and **Dice Score**.
- Experimented with models including **VGG16, Res-Net, and Dense-Net** blocks to evaluate performance and refine segmentation accuracy.
- Implemented techniques for model evaluation and **parameter tuning, improving computational efficiency** and ensuring **robust segmentation** outcomes across diverse datasets.

DEFENCE RESEARCH & DEVELOPMENT LABORATORY (DRDL) — Hyderabad, India
Research Intern — May 2023 – Jul 2023

- Formulated and simulated an advanced aircraft pitch control system utilizing **PID controllers** in **MATLAB and Simulink**, leveraging machine learning techniques to enhance control precision and achieve a **11% improvement in system stability**.

PROJECTS

MEAL NUTRITION ANALYSIS — Sep 2024 – Dec 2024

- Processed diverse data types using advanced techniques, creating a unified **predictive pipeline** with an optimized **neural network architecture** combining **LSTM, CNNs, and fully connected layers.**
- Developed a **multi-modal deep learning model** for diet monitoring and calorie prediction, integrating Continuous Glucose Monitors (CGM), food images, demographics, physical attributes, and gut microbiome.
- Outperformed **benchmarks by 34%** in lunch calorie intake predictions, showcasing expertise in **multi-modal machine learning** and achieving strong model generalization.
- Optimized model performance through systematic **hyperparameter tuning**, achieving validation loss of 0.83, **test loss of 0.34**.

IMAGE CLASSIFICATION USING DEIT WITH TRANSFER LEARNING — Dec 2024 – Jan 2025

- Designed and trained a DeiT (**Data-efficient Image Transformer**) **Vision Transformer** model from scratch for image classification with 7 classes, incorporating pre-trained **transformer blocks** for improved performance.
- Achieved **76% accuracy** on the benchmark dataset, surpassing the target accuracy of 70%, by leveraging **CUDA** for efficient **GPU computation**.
- Adapted **transfer learning** by freezing pre-trained blocks in the **Vision Transformer model**, customizing the remaining layers to enhance accuracy for **multi-class image classification** of buildings.
- Utilized **advanced computer vision techniques** with Pytorch to preprocess images, implement custom Transformer blocks, and **tune hyperparameters** to improve **model generalization** and overall accuracy.

HEALTH MONITORING AND HEART STROKE PREDICTION — Jan 2023 – Apr 2023

- Applied machine learning algorithms, including **Regression, Decision Trees, SVM, and Random Forest**, to analyze health data from Health Associations archives, achieving **high accuracy in cardiac disease prediction**.
- Integrated **IoT-enabled ESP8266** with pulse oximeters and blood pressure monitors to collect **real-time health data**. Trained and validated **predictive models** on authentic datasets, ensuring high accuracy in **cardiac event prediction**.

LEADERSHIP

IEEE MTTS [MICROWAVE THEORY AND TECHNIQUES SOCIETY] — Vellore, India
Co-Secretary — Jan 2023 – Dec 2023

- Led as **Co-Secretary** of IEEE MTTS, managing and coordinating multiple events and seminars focused on emerging technologies.
- Directed efforts to enhance chapter's outreach and impact through effective **event planning and execution**.

CERTIFICATIONS

- **Supervised Machine Learning** by DeepLearning.AI and Stanford University- Certification.