


Himanshu Bhenwal

Bachelor of Technology

Computer Science Engineering and DS and AI

 Github Profile

 +91-8130104862

 bhenwalhimanshu02@ieee.org

 Kaggle Profile

 LinkedIn Profile

EDUCATION

•B.Tech in Computer Science and Engineering

2021-25

Bhagwan Parshuram Institute Of Technology, New Delhi

Offline Regular Degree

•B.Sc.(Hons.) in Data Science and Artificial Intelligence

2023-27

Indian Institute Of Technology, Guwahati

Online Degree Program

EXPERIENCE

• Machine Learning Engineer Intern

Jun 2024 - Present

PrudentBit

- Contributed to the development of ImmuneFiles-PII, collaborating on a service for detecting PII entities in documents using deep learning NER models and pattern recognizers, helping achieve 95% accuracy in entity detection.
- Assisted in engineering ImmuneAegis, an advanced security platform integrating ImmuneFiles-PII for threat detection and analysis, contributing to a 40% improvement in threat detection rates.
- Executed RAG architecture integration for enhancing platform's assistants and chatbots, resulting in 30% improvement in response accuracy.
- Developed and optimized CI/CD pipelines using GitHub Actions, reducing deployment time by 50%.
- Utilized Python, PyTorch for models training and evaluation, Django for APIs, PostgreSQL for database, Celery for tasks management, and AWS services (Lambda, ECS, S3) for scalable model deployment.

• Machine Learning Engineer Intern

Sep 2023


Whizoid Studio

- Designed and applied automated data preprocessing pipelines that reduced image processing time by 60% and standardized 50,000+ medical images across 5 different datasets.
- Annotated and quality-checked 25,000+ medical images using Label Studio, achieving 98% annotation accuracy as verified by domain experts, resulting in a high-quality training dataset.
- Developed and deployed 3 custom CNN architectures that improved classification accuracy by 25% compared to baseline models, while reducing inference time by 35%.
- Optimized model training workflows using data parallelism and mixed-precision training, reducing training time by 40% without compromising model performance.

• Student Researcher | Computer Vision & Machine Learning

Sep 2022 - Present

Bhagwan Parshuram Institute of Technology

- Conducting novel research in medical image segmentation under Dr. Achal Kaushik (Dean of Academics) , leveraging hybrid vision transformers to achieve interpretable results and higher accuracy over CNNs in tumor detection tasks.
- Led lab projects in Computer Vision and Image Processing as well as Robotics in my tenure.
- Authored 2 pre-prints on self-supervised learning for MRI segmentation (under review); open-sourced code repositories on Github.

PERSONAL PROJECTS

•Alzheimer's Detection using Hybrid Vision Transformers

Developed an advanced deep learning system for Alzheimer's disease classification using hybrid Vision Transformer architectures.

- Implemented and evaluated multiple Vision Transformer variants including TinyViT with modified inception modules, achieving over 99% accuracy in disease classification.
- Engineered custom training optimizations including Model EMA, Mixup augmentation, and early stopping, improving model robustness and convergence.
- Developed comprehensive evaluation pipeline with ROC curves, confusion matrices, and attention visualization using GradCAM.
- Utilized Python, PyTorch, NumPy, and Matplotlib for implementation and visualization.

•srch.io : RAG Web Search Engine

Developed a RAG-based search engine using SearchApi and LeptonAI.

- Used LeptonAI workspace for deploying Mixtral 8x7B.
- Engineered a Python backend to facilitate communication between searches, results, and RAG functionality.
- Implemented a interactive frontend in React.

TECHNICAL SKILLS AND INTERESTS

Languages: C, C++, Python, Java, HTML, JavaScript

Libraries: NumPy, Pandas, C++ STL, Transformers, LangChain, LlamaIndex

Dev Tools/Environments: VScode, Vim, JupyterLab, Git, Docker, GitHub Actions

Frameworks: TensorFlow, PyTorch, Keras, scikit-Learn, CSS, FastAPI, Django, Celery












Databases: PostgreSQL, Redis

Cloud Platforms: AWS (Lambda, ECS, S3, SageMaker)




POSITIONS OF RESPONSIBILITY

- **Chairperson at IEEE BPIT Student Branch** *2021 - Present*
 - Initiated impactful initiatives to promote Machine Learning awareness among peers.
 - Mentored junior students, fostering a culture of continuous learning and growth.
- **Co-creator and Lead Instructor of IEEE BPIT's SIG on ML** *2022 - Present*
 - Teaching ML in semester long classes to students from different branches.
 - Leading weekly paper reading sessions and discussions with fellow team members.
 - Helping fellow junior students in their research projects in Computer Vision, NLP.

LICENSES AND CERTIFICATIONS

- **Natural Language Processing Specialization**  *DeepLearning.ai*
- **TensorFlow Developer Professional Certificate**  *DeepLearning.ai*
- **Machine Learning Specialization**  *DeepLearning.ai*
- **Neural Networks and Deep Learning**  *DeepLearning.ai*
- **Python Essentials for MLOps**  *Duke University*
- **Introduction to Machine Learning in Production**  *DeepLearning.ai*
- **Machine Learning Data Lifecycle in Production**  *DeepLearning.ai*
- **Introduction to Machine Learning on AWS**  *DeepLearning.ai*
- **Machine Learning Explainability**  *DeepLearning.ai*
- **Divide and Conquer, Sorting and Searching, and Randomized Algorithms**  *Stanford Online*
- **Python for Data Science and Machine Learning**  *Udemy*

ACHIEVEMENTS, OPEN SOURCE CONTRIBUTIONS AND TALKS

- **Kaggle Expert in the Notebooks and Discussions Categories** 
 - Rank 727 in Discussions out of 30,412.
 - Rank 2067 in Notebooks out of 58,583.
- **Served as member of jury at the Datadive : The Ultimate Datathon**
 - Served as a judge at the annual flagship datahathon organized by IEEE WIE BPIT.
- **Research**
 - **Since June 2024** Open Source research on information retrieval and mechanistic interpretability under my mentor.
 - **Since August 2024** Handling paper reading sessions at AI4Bharat discord server. 
 - **Since January 2025** Cohere for AI : LLM Cohort Track 1 attendee.
- **Talks**
 - **July 2024** Transformers to Mamba, AI4Bharat 
- **Conference Attendances**
 - **August 2024** Selected among 5 exceptional student volunteers in the IEEE Student Branches of New Delhi, India to attend the IEEE Region 10 SYWLC Congress 2024 at Tokyo, Japan held from 29th August to 1st September 2024.