Atul Bharti

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EDUCATION

Vellore Institute of Technology   Chennai, India
Bachelor of Technology, Computer Science (CGPA: 8.67)   *Aug. 2023 – May 2027*

PROJECTS

Job Recommendation System | *Python, SQL, Scikit-learn*   Jan 2025 – Present
- Developed a **job recommendation system** processing over **500,000+ job listings** and candidate profiles.
- Optimized **job retrieval speed by 31%**, efficiently ranking **100,000+ job descriptions**.
- Implemented **collaborative filtering** and **TF-IDF-based content filtering**, improving accuracy by **23%** .
- Built an end-to-end **data pipeline**, reducing **preprocessing time by 40%** through automated data cleaning.
- Conducted **exploratory data analysis (EDA)** to extract key job market insights and improve recommendations.
- Version-controlled and documented the project on **GitHub**.

Blindness Detection | *Python, PyTorch, OpenCV, Scikit-learn*   January 2025 – Present
- Developed an automated **blindness detection system** leveraging the **SwinV2 Transformer**, achieving a **19.6% improvement** over CNN-based models.
- Processed and analyzed **35,126 retinal fundus images**, applying advanced augmentation techniques like CLAHE and adaptive histogram equalization to enhance model generalization.
- Utilized **transfer learning** with SwinV2, reducing training time by **43%** and cutting down validation loss by **5.2%**.
- Implemented **EfficientNet feature extraction** to improve classification of diabetic retinopathy severity levels, boosting AUC-ROC to **0.921**.
- Optimized data pipeline using **NumPy** and **TorchVision**, cutting memory usage by **27%** and improving batch inference efficiency.
- Evaluated model performance using **precision, recall, F1-score, and AUC-ROC**, achieving a **92.1% F1-score** on test data.

TECHNICAL SKILLS

Languages: Python, SQL (PostgreSQL, MySQL), Java, C++
Frameworks: PyTorch, Scikit-learn, FastAPI, Flask
Libraries: pandas, NumPy, Matplotlib, Seaborn, SciPy, OpenAI API
Tools: Git, Docker, Jupyter, Azure ML
Databases: PostgreSQL, MongoDB

COMPETITIONS

Hack The Horizon   August 2024
Top 6 Finalist & Exemplary Submission   *VIT Chennai, TN*
- Developed a 3D ticket-booking website in a team setting, integrating creative and technical solutions.
- Designed theater models and components using Blender, ensuring detailed and realistic visuals.
- Utilized Godot Game Engine to integrate models, animations, and lighting for seat selection.
- Earned a perfect score in the website design round for creativity and originality.
- Deployed the fully functional website online during the competition.

EXTRACURRICULAR

Think-Up Ideathon   September 2024
Student Coordinator   *VIT Chennai, TN*
- Organized a **national-level ideathon** with **450+ participants** from **20+ colleges**.
- Secured **INR 50,000+ in sponsorship** from Lagoon Tech, Dubai, ensuring event success.
- Managed and executed a **30-hour competition**, overseeing logistics, participant engagement, and final presentations.