Sarvesh Rastogi

Software Engineer - Machine Learning Enthusiast

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Interests

Dynamic computer science enthusiast skilled in algorithms, data structures, and software development. Excels in crafting elegant code, solving intricate problems, and exploring machine learning. Driven by a blend of logic and creativity, I enthusiastically pursue opportunities to innovate and push boundaries.

Technical Skills

Programming Languages	Python, C, Java, HTML, CSS
Frameworks	TensorFlow, PyTorch, OpenCV, Scikit-learn, Pandas
ML Techniques	Deep Learning, Computer Vision, Image Processing, Natural Language Processing
Tools	Git, GitHub
Databases	SQL

Experiences

Machine Learning Intern: AutoYOS Jul 2024 - Present: *Machine Learning, Computer Vision, TensorFlow, Pandas, Python*

- Developed and fine-tuned machine learning models for the Dry Eye project, achieving significant performance improvements.
- Implemented and optimized AI-driven multispectral imaging systems to enhance diagnostic capabilities.
- Performed data analysis and preprocessing, including feature engineering and normalization, to improve model accuracy.
- Collaborated with senior engineers to integrate advanced machine learning techniques, including deep learning and computer vision methodologies.
- Conducted performance evaluations and iteratively refined models based on metrics and feedback to ensure optimal results.

Projects

Meibomian Gland Segmentation using UNet **Aug 2024 - Present:** *UNet, TensorFlow, OpenCV, Python*

- Developed and fine-tuned a custom model for accurate segmentation of Meibomian glands, achieving significant improvements in performance.
- Employed advanced image processing techniques, to enhance gland visibility and detail, resulting in clearer images for analysis.
- Created a comprehensive image processing pipeline that effectively extracted individual Meibomian glands from segmented images, allowing for in-depth study of each gland's characteristics.
- Performed thorough analyses of extracted glands, yielding valuable insights into the severity of dry eye conditions.

Diabetic Retinopathy Detection and Classification **Oct 2024 - Nov 2024:** *PyTorch, ResNet, EfficientNet, ViT, Flask*

- Built an ensemble model (EfficientNet-B0 + Vision Transformer) for classifying Diabetic Retinopathy severity and detecting retinal conditions (CRVO, BRVO, PRH, RHL).
- Developed clot detection with ResNet18 and retinal area segmentation using a VGG-based U-Net.
- Used Focal Loss for class imbalance and Cosine Annealing to optimize training
- Fine tuned Gemini to automatically summarize results, providing doctors with detailed reports for better condition insights.

Relevant Experience and Skills

- **Software Development:** Extensive experience in developing and maintaining scalable and distributed software systems.
- **Machine Learning and NLP:** Proficient in applying machine learning and natural language processing techniques to solve complex problems.
- **Project Management:** Proven ability to manage and execute complex projects, ensuring timely delivery and quality outcomes.
- **Collaboration:** Strong team player with experience working in productive and innovative teams, including peers, managers, and cross-functional teams.
- **Problem Solving:** Adept at troubleshooting and resolving issues at the code level, ensuring smooth operation of business-critical systems.

Education

B.M.S. College of Engineering **In progress:** *B.E. Computer Science and Engineering*

- Bachelor of Engineering in Computer Science (Expected Graduation: May 2026)