Ibtasam Ur Rehman

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Education

Ho Chi Minh City University of Technology — Ho Chi Minh City, Vietnam
Masters of Science in Computer Science — *Aug 2023 – June 2025*

Riphah International University — Islamabad, Pakistan
Bachelors of Science in Software Engineering — *Sep 2017 – Aug 2021*

Master's Thesis

Machine Learning Application Method to Detect Ophthalmic Diseases
Master's Thesis - Supervisor: Dr. Pham Hoang Anh

- Achieved 95.24% accuracy in cataract detection using an optimized RBF-SVM classifier, outperforming Random Forest (94.44%) and Polynomial SVM (92.86%) through extensive hyperparameter tuning with GridSearchCV.
- Engineered comprehensive feature extraction pipeline including HSV color features, Canny edge detection, and Hu moments for shape analysis, creating robust feature vectors for classification.
- Developed and preprocessed a dataset of 658 retinal images, implementing advanced techniques like unsharp masking and color space transformations to enhance model performance.
- Conducted comparative analysis of multiple ML algorithms, establishing RBF-SVM as the optimal model for ophthalmic disease detection with consistent 95% F1-score performance.

Experience

The Millennium Universal College TMUC — Islamabad, Pakistan
Lecturer — *Sept 2024 – Present*

- Instructed and mentored students in a range of technical subjects including Mobile Computing, Full Stack Development, and Web Technologies.
- Developed and delivered comprehensive course materials and hands on projects to provide students with foundational knowledge and practical skills.

Advanced Intelligence Technologies (AITech Lab) — Ho Chi Minh City, Vietnam
Researcher — *Dec 2023 – June 2025*

- Conceptualized and developed advanced AI and IoT solutions, applying machine learning techniques to enhance system capabilities across various projects.
- Collaborated with faculty and research teams to define project goals and identify knowledge gaps, contributing to literature reviews and aligning project objectives with real-world problems.
- Applied machine learning algorithms to real-world data analysis tasks, optimizing models for specific challenges in AI. Worked on classification, prediction, and disease detection tasks across various projects.

Ministry of Information Technology and Telecommunication — Pakistan
Senior Mobile Application Developer — *Nov 2022 – May 2023*

- Developed application with an intuitive UI, ensuring user-friendly features for easy adoption.
- Implemented secure API integrations using Flutter to maintain data confidentiality and integrity.
- Led iterative development cycles, gathering and incorporating feedback from stakeholders and users to continuously improve the app.

Techorra Tech — Pakistan
Mobile Application Developer — *Aug 2021 – Nov 2022*

- Performed in-depth user research to guide and optimize design decisions, ensuring alignment with user needs and expectations.
- Developed high-performance cross-platform mobile applications using Flutter, focused on delivering seamless and intuitive user experiences.
- Leveraged design tools like Figma and Adobe XD to create comprehensive and detailed UI mockups, ensuring precision in design and user interface development.

Publications & Conferences

Rehman I, Pham HA. Cortex Vision: Detection of Ophthalmic Disease Using Machine Learning Algorithm.

In: Proceedings of the 10th EAI International Conference on Smart Objects and Technologies for Social Good; 2024 Dec 19 (pp. 138-149). Cham: Springer Nature Switzerland.

Read Paper

SmartGluco: A Mobile Health Solution for Diabetes Risk Assessment Using Machine Learning

Accepted at: 4th International Conference on Innovations in Data Analytics (ICIDA 2025), Springer LNNS Series.

Read Paper

Evolution of Explainable AI in Healthcare: Toward Trustworthy and Accurate Diagnostics

Accepted at: 3rd International Conference on Artificial Intelligence, Computer, Data Sciences and Applications, IEEE Conference (ACDSA26).

Read Paper

Deep Learning Architectures for Urolithiasis Classification: A Comparative Analysis of DNN, MLP and Autoencoder based Models

Presented at: Malaysian Automatic Control Symposium (MARS 2025).

Read Paper

GELU-Activated Neural Network for Cardiovascular Risk Assessment: A Feature Engineered Deep Learning Approach Using Clinical Biomarkers

Accepted at: 2nd International Conference on Intelligent Systems and Security (ICISS2026).

Read Paper

Hybrid AI Approaches for Clinical Diagnostics: A Case Study on Meningitis

Presented at: Malaysian Automatic Control Symposium (MARS 2025).

Read Paper

Hybrid Machine and Deep Learning in Brain Tumor MRI Analysis

Submitted at: 3rd International Conference on Artificial Intelligence, Computer, Data Sciences and Applications, IEEE Conference (ACDSA26).

Read Paper

Academic References

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