Ibtasam Ur Rehman

LinkedIn | Github | Gmail | Google Developer Profile

Education

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

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

Master Research

Detection of Ophthalmic Disease Using Machine Learning Algorithms
Supervisor: Dr. Pham Hoang Anh

- Achieved 94% accuracy in cataract detection using an optimized Support Vector Machine (SVM) with the Radial Basis Function (RBF) kernel, and validated with Random Forest.
- Curated and preprocessed a comprehensive retinal image dataset, applying advanced techniques to enhance model performance for both SVM and Random Forest.
- Performed extensive hyperparameter tuning to maximize the predictive accuracy of both SVM and Random Forest models.
- Developed a mobile application for real-time cataract detection as a proof of concept, demonstrating potential for improved healthcare accessibility.

Experience

Researcher — Vietnam
Advanced Intelligence Technologies (AITech Lab) — *Feb 2024 – May 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.

Senior Mobile Application Developer — Pakistan
Ministry of Information Technology and Telecommunication — *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.

Mobile Application Developer — Pakistan
Techorra Tech — *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.

Projects

Cortex Vision | *Python, Flask, Flutter, Firebase, Figma, UI UX*

- Developed an AI-powered mobile application to detect cataracts, enhancing early diagnosis and patient outcomes.
- Designed and integrated a mobile app with Flask API and Firebase for user data management.
- Conducted thorough testing, achieving a 94% accuracy rate in cataract detection.

DermaAI | *Flutter, Machine Learning, Image Classification, Python, UI UX*

- Developed a cross-platform mobile application which diagnose and categorized skin condition from images. Implemented a convolutional neural network (CNN) to interpret skin lesions. Achieved 90% accuracy in classifying benign and malignant conditions, enhancing early detection in dermatology.

Heart Disease Detection Application | *Flutter, Machine Learning, Matplotlib, OpenCV, Python, UI UX*

- Developed a machine learning application to detect heart abnormalities from ECG readings using the MIT-BIH Arrhythmia Database.
- Preprocessed ECG data and trained a Convolutional Neural Network (CNN) to classify ECG images as normal or abnormal.
- Implemented a user-friendly interface for uploading ECG images and receiving diagnostic feedback.

Diabetes Prediction | *Python, Machine Learning*

- Developed a machine learning model to predict diabetes risk using key health metrics such as Glucose, Blood Pressure, Insulin, BMI and Age.
- Utilize logistic regression for prediction.It includes user input functionality for real time predictions, helping individuals assess their diabetes risk based on their health information.

Brain Tumor Classification | *Python, Machine Learning*

- Utilizing Support Vector Machines for classifying brain tumors from MRI images, achieved prediction accuracies of 90.12% Linear, 93.56% Polynomial and 95.12% RBF
- Extracted features from the images using Histogram of Oriented Gradients to enhance model performance and accuracy.

Real Estate Price Prediction and Classification Mobile Application | *Python, Flutter, Machine Learning*

- Developed a mobile application utilizing a hyperparameter-tuned Random Forest regressor to predict house prices.
- Implemented a classification feature to categorize houses as "expensive" or "not expensive" based on predicted prices, enhancing user understanding of property value.
- Integrated the machine learning model into the mobile application using a Flask API, enabling real-time price predictions and classifications.

Technical Skills

Programming Languages Python, Dart
Frameworks: Flutter, Material UI, FlaskAPI
Tools: Git, Android Studio, Visual Studio, PyCharm, Figma, Adobe
Libraries: Pandas, NumPy, Matplotlib, Plotly, CV2, Scikit-learn
Design Skills:UI/UX, Application Design, Wireframing, Prototyping, Visual Design and Interaction Design

Google DevFest 2024

Mobile Tech Jam
Supercharge your web
Sudo code AI/ML
Devfest Cloud

Additional Courses and Certificate

Exploratory Data Analysis for Machine Learning
Certificate Link

Supervised Machine Learning: Regression
Certificate Link

Python Data Structures
Certificate Link

Certificate for UX Design Process
Certificate Link

Build Wireframes and Low-Fidelity Prototypes
Certificate Link

BK Innovation Certificate of Recognition
Certificate Link

Publication

Detection of Ophthalmic Disease Using Machine Learning Algorithm
Status: Accepted (Click to Verify)
Draft: Read Draft
Role: Lead Author
Conference: 10th EAI International Conference on Smart Objects and Technologies for Social Good, Can Tho Vietnam

References

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