Bhargavi Poyekar

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Education

- **University of Maryland - Baltimore County** — **Maryland, United States**
  M.S. - Computer Science; GPA: 4.0 — Aug 2022 - May 2024
  Courses: Advanced Operating Systems, Principles of Computer Security, Neural Engineering, Machine Learning, Data Visualization.
- **Sardar Patel Institute of Technology, University of Mumbai** — **Maharashtra, India**
  B.Tech - Computer Engineering; GPA: 3.81 — Aug 2018 - May 2022

Experience

- **Student Research Assistant** — **Maryland, United States**
  University of Maryland Baltimore County (Part-time) — Sep 2022 - Present
  - **ECG HRV Features**: Pioneered the extraction of time, frequency, and non-linear HRV features from ECG signal data using Python, contributing to the successful completion of the research.
  - **Machine Learning Models**: Optimized machine learning models for cognitive load classification, improving accuracy and experimented with data by adding Gaussian noise to simulate real-world conditions, enhancing **model robustness**.
  - **Data Analysis**: Analyzed data with strong analytical skills, providing valuable insights into trends and patterns instrumental in shaping research outcomes.
- **Laravel Developer Intern** — **Remote**
  Origin Cloud Tech — June 2020 - Aug 2020
  - **Learning Management System**: Developed a scalable LMS Website using the Laravel Model-View-Controller Framework, resulting in an improved user experience and increased functionality, outperforming the project requirements.
  - **Authentication and API's**: Streamlined the system's security by implementing multifactor authentication, incorporating email and mobile OTP verification. Expertly integrated various APIs, including payment methods such as Paypal and Razorpay, message and location APIs, and Zoom API, improving the efficiency and effectiveness of the website.
  - **UI and Database**: Designed an aesthetically pleasing user interface for the application using HTML, CSS, Bootstrap, and Javascript, showcasing strong UI/UX design skills. Directed the database management process by creating a well-structured database design and performing CRUD queries with the use of join operations.
- **Website Developer Intern** — **Remote**
  Ask in City — May 2020 - June 2020
  - **Frontend and Backend**: Utilized HTML and PHP to design and implement new features in an e-commerce project, resulting in an enhanced user experience and improved website functionality.
  - **Agile Framework**: Successfully implemented agile methodology, attending daily scrum meetings and working collaboratively with team members leading to an efficient and timely project completion.

Projects

- **Eye Pupil Response (Time Series Analysis, Signal Processing, Machine Learning)**: Constructed a cutting-edge machine learning model that accurately predicts the difficulty of math problems and the time taken to respond by analyzing data from pupil response with 70% accuracy. **Tech: Python, Scikit-learn, Pandas, Numpy, Matplotlib.**
- **Face Recognition Attendance System for Online Classes (Neural Network, Computer Vision)**: Created an innovative attendance system for online classes that utilizes sophisticated face detection and recognition algorithms. Improved the model to function seamlessly even in adverse conditions such as low light intensity, maximum head and neck tilt, and blurred images. Tech: **Python, OpenCV, Django, CNN.**
- **Domestic Violence App. (Android Application)**: Engineered a comprehensive application to help victims of domestic violence fight against this critical issue by providing an anonymous discussion platform, collecting evidence to strengthen cases, and connecting with expert counselors and NGOs. **Tech: Flutter, Dart, Firebase.**
- **EMOMUSIC: (Computer Vision, Web Development**: Developed an intuitive application that identifies a user's emotional state through facial expression analysis and recommends a customized playlist based on the analysis. Created an advanced music player to play the recommended songs tailored to the user's emotional state.**Tech:Python, Django, CNN, HTML, JavaScript, SQLite**
- **Image Steganography app (Android Application, Cryptography)**: Designed and built an innovative **Android application** utilizing advanced **object-oriented programming concepts in Java** to hide confidential messages within cover images using steganography techniques. **Tech: Java, Android Studio.**

Technical Skills

- **Languages and Database**: **Python, Java, C**, PHP, Go, JavaScript, SQL, HTML, Dart, MySQL, SQLite, MongoDB
- **Frameworks**: **Django, Django-Rest**, Laravel, ExpressJS, AngularJs, Flutter, Android Studio, Scikit, TensorFlow
- **Others**: GIT, Linux, Tableau, Matplotlib, Jupyter, Pandas, Numpy, Bootstrap, JQuery, API, JWT

Publications

- **Paper: Stroke Prediction using SMOTE-TOMEK and Neural Network**: **IIT Kharagpur**, India, 12th ICCCNT 2021: Proposed an **Artificial Neural Network** which gives the best **ROC score of 0.84** and performed comparitive analysis using ensemble-based, tree-based and Naive Bayes-based Algorithms. https://ieeexplore.ieee.org/document/9579763
- **Paper: Diabetes Prediction using Feature Extraction and Machine Learning Models**: Hindustan Institute of Tech. 2nd ICESC 2021: Performed **EDA** and trained various ensemble **decision tree** models, SVM, and KNN for diabetes prediction using the Pima dataset. Improved the performance of the model by using correlation based **feature selection**.