Ritik Sharma

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Experience

- **University of Cambridge** — Cambridge, UK
  Cloud Machine Learning & Full Stack Developer — *May'20 - Jul'20*
    - **Project**: Predicting Anemeia among users by predicting the Vitamin D, Vitamin B-12, and Iron content from medical reports and images of the patients.
    - **Cloud Machine Learning**: Performed image masking by using Google Vision APIs to detect text in an image further classifying it as a named entity, masked the image and stored it in google cloud storage. Used the cloud functions to fetch user uploaded image of blood reports and hosted the machine learning model for image masking.
    - **Front-end**: Front-end development involved many dart functions like authentication, user profile, and image upload functions. Authentication allowed users for login and sign-up services ensuring the creation, modification, and deletion of a user whereas the user profiles function created, modified, and deleted the user. The Image Upload Function was used to upload images to server.
    - **Back-end**: Back-end development comprised of firebase authentication for user management, login, and sign up while Firestore served as a database for user data storage (textual files) and management through query commands, the Firebase Storage involved user storage for the media files (for example, the patient reports, blood reports, etc).

  Development Intern — *Mar'20 - Sep'20*
    - **Project Development**: Finished three projects simultaneously and successfully developed three cross-platform applications using React-Native, and Flutter. Deployed the ML models in the Google Cloud Platform (GCP).
    - **Management**: Managed the Application development and Cloud team to deploy the software for clinical trials in parallel collaboration with the Machine Learning team.
    - **Frameworks**: Used React-Native, Redux, Node Package Manager (NPM), and Flutter for developing the Front-end and Back-end for the cross platform application.
    - **Packages**: Over 20 packages were used for Firebase services and authentication, Firestore, Firebase storage, Cloud messaging, React Navigation, and Audio-Video recording options.
    - **Cloud Technologies**: Worked with Google Cloud Firestore (Firebase) using its client library for Python v3.7 and Node.js for database interactions.

- **NGB Living** — Berlin, GER
  Machine Learning Intern — *Jun'20 - Sep'20*
    - **Project**: Designing an interactive chat assistant using machine learning to automate the existing process for addressing customer queries about the company services.
    - **Dataset Creation**: Dataset was created using the Frequently Asked Questions and queries that the company received through emails. It was then put together into a systematic structure that can used for developing models.
    - **Model Creation**: Built on TF-IDF vectorizers, GloVe Embeddings, Cosine Similarity, and Query Handler.
    - **Model Deployment**: Deployed the model on WordPress and Cloud-Run (GCP) serverless platform.
    - **Tech Stack**: HTML, CSS, JavaScript, Python, Flask, Cloud-Run (GCP), Git, Docker, gcloud-cli.

- **iPing Data Labs** — Mumbai, IND
  Machine Learning & Computer Vision Intern — *Dec'19 - Feb'20*
    - **Project**: Automating quality assurance for industry workers while ensuring safety paraphernalia and smooth execution of the industrial processes using Computer Vision.
    - **Computer Vision**: Performed object detection and logging time periods by deploying YOLO-V3 with transfer learning and fine tuning classifications for all layers of the network.
    - **Data Creation**: Generated the data, scraped and tested for redundancy from the industrial video scenarios using Python v3.7 and Google Colaboratory.
    - **Machine Learning**: Fine-tuned YOLO-V3 using pre-trained MS-COCO weights, modified for custom dataset.

- **Association of Computer Engineering Students** — Mumbai, IND
  Technical Advisor — *Jun'19 - Aug'20*
    - **Competitive Programming**: Created a competitive programming environment in the college by organising several Hackathons and Webathons ranging for over 24-hours. Created CP problems for the hackathons.
    - **Technical Workshops**: Organized events and workshops based on tools and technologies like C, C++, Python, Java, R, Swift, PHP, and NetBeans, depending upong the students' profile and requirements.
    - **Technical Festivals**: Managed and organized technical festivals related to College and Department.

Publications

2020   Multimodal Depression Severity Prediction from medical bio-markers using Machine Learning Tools and Technologies *(Cornell University Press)*

Scholastic Achievements

2019   Secured **First Rank** in an inter-departmental programming webathon among over 150 students involved in rigorous programming to create an application from scratch in 24 hours.

Relevant Coursework & Certifications

Certified TensorFlow Developer
Certified AWS Professional
Analysis of Algorithms | Advanced Algorithms | Data Structures and Algorithms | Theory of Computer Science | Computer Organization and Architecture

Projects

- **Performance testing using server-side-rendering**: Developed and deployed a server-side rendered blog website using Next.js with Prisma and MySQL integration. Tested the website's server response and performance in contrast to static, universal, and client-side rendered websites based on server-response time, DOM loading and processing, speed index, time to first byte, and final interactive time.
- **Multimodal Depression Severity Prediction**: Developed a cross-platform smartphone application using React-Native, Redux, and Node Package Manager (NPM). Used over 20 JavaScript packages necessary for the User Interface (UI) components, Firebase, and Firestore services. Structured the back-end using GCP for authentication, and back-end management of user services. Used Cloud Firestore for user data storage using its client library for Python v3.7 and Node.js for database interactions. One database was dedicated to the user profiles of the patients and doctors while the other database comprised only of the results.
- **Automatic Attendance Application**: The project is an application to automate the attendance system in classrooms using Machine Learning and Computer Vision. The front-end of the application is developed on React-Native using the DaaS firebase. Input images are the classroom images that could be uploaded by class supervisor on the application which are then processed by the model. The dataset was stored on Google Firestore (firebase) and App engine for deploying the application on Google Cloud, and employed Google Buckets for storing run-time dataset storage.
- **Women Safety Application**: Devised an SOS application for women safety within 24 hours for a hackathon, and secured the 1st place. Front-end was developed on React-native with DaaS firebase. Users can send an SOS alert (Call/Message) which is then sent to the nearest helpers which could be relatives, NGOs, Police Stations, and registered individuals with their location.
- **Hospital Management System**: Built a GUI based desktop application for Windows by including Data Structures. Efficiency in time optimization through management of patient, hospital staff, and admin console.
- **Home Automation**: Used relay switches on arduino programming for automation tasks by providing access to WiFi and other features. Remote control for home appliances through mobile devices. Built voice control switch board for switching home appliances using C programming.
- **Aptitude Training**: Created a website to provide online aptitude training and assessments for ensuring if the users were ready for the job interviews. Used technologies like HTML5, CSS3, PHP to create a website that tests and prepares the students by rigorous training every 2 weeks.

Education

- **University of Mumbai**   IND
  Bachelor of Engineering | Department of Computer Engineering | GPA: 8.33   *Aug'18 – May'22 (Expected)*

Skills and interests

Domains	Mobile App Development, Web Development, Machine Learning, Deep Learning, Computer Vision
Languages	Python, Bash, Java, JavaScript, TypeScript, CSS3, SASS, C/C++, PHP
Frameworks	React, Next.js, React Native, TensorFlow, Keras
Softwares	Visual Studio Code, Android Studio, Tableau, Weka
Cloud	Google Cloud Platform, Amazon Web Services(Certified)
Tools	Node.js, MongoDB, Git, GitHub, LaTeX