

# Ishmeen Garewal

Website :<https://ishmeen-11.github.io/Ishmeen-Portfolio/>

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## Education

Bachelor of Engineering : Computer Engineering

Jun 2025

Fr. Conceicao Rodrigues Institute of Technology - Mumbai, India

- CGPA: 9.66/10

## Internship Experience

Intern at the Risk Advisory Department

Jun 2024 - Jul 2024

Deloitte Touche Tohmatsu India LLP - Mumbai, India

- Conducted a comparative analysis of Operational Risk policies between the Reserve Bank of India (RBI) and a Non-Banking Financial Company (NBFC), identifying key risk areas and recommending mitigation strategies.
- Developed the front-end of a data visualization and analysis tool using the Django framework, incorporating HTML, CSS, and JavaScript to enhance user interaction and data presentation.
- Streamlined the calculation of Mark-to-Market (MTM), volatility, and option value for foreign exchange (FX) deals, migrating from manual Excel processes to a Python-based solution using libraries like NumPy, Pandas, and Quantlib, incorporating Black-Scholes models and Monte Carlo simulation models.

## Research And Publication

- **Blockchain-Based Smart Contracts for Efficient Load Management in Vehicle-to-Grid (V2G) Systems**  
Accepted for presentation at the 4th International Conference on Ubiquitous Computing and Intelligent Information Systems (ICUIS 2024)  
Currently under publication in IEEE Xplore.
- **FoodMO: A Food Nutrient Analysis Application using Optical Character Recognition and Machine Learning**  
Presented at the 9th International Conference on ICT for Sustainable Development, Goa, India  
Paper under publication in Springer's Lecture Notes in Networks and Systems (LNNS).
- **Topic Modeling for Identifying Emerging Trends on Instagram using Latent Dirichlet Allocation and Non-Negative Matrix Factorization**  
Presented at the 10th IEEE International Conference on Advanced Computing and Communication Systems (ICACCS 2024), Coimbatore, India  
Published in IEEE Xplore.
- **Emerging Applications and Challenges in Quantum Computing: A Literature Survey**  
Presented at the International Conference on Advances in Big Data, Computing and Data Communication Systems, Port Louis, Mauritius  
Published in IEEE Xplore.
- **Natural Language Processing: A Survey of Approaches, Applications, and Future Directions**  
Presented at the Asian Conference on Intelligent Technologies, Karnataka, India  
Currently under publication in IEEE Xplore.

## Select Academic Projects

### ECG Report Analysis by Leveraging Generative AI

August 2024 – Present

- Designing a web-based tool to analyze ECG reports and generate insights using Generative AI. The tool assesses the severity of potential heart conditions, presenting data in patient-friendly language to aid doctors in diagnosis.
- Analyzes past health conditions and forecasts future health risks based on current ECG data and the patient's lifestyle, delivering personalized heart health information.
- Utilizes LLMs and LangChain for report generation and implements deep learning models, such as RNNs and CNNs, for detecting and predicting future health conditions.

### FoodMO: A Food Nutrient Analysis Application using OCR and ML

August 2023 – May 2024

- Developed a nutrient analysis app that uses OCR to extract nutritional information from food labels and provides simplified details about ingredients.
- Determines food suitability based on user profiles, health history, and dietary needs using a Random Forest Regressor.
- Generates healthier recommendations using Cosine Similarity, tailored to users' health requirements.

### Physics IRL: An Augmented Reality (AR) Based Application

August 2022 – May 2023

- Created a mobile application on Flutter using AR to simplify physics concepts for young students.
- Engineered AR projections with Unity and C#, integrating Vuforia for image recognition and ARCore with ARFoundation for object detection, demonstrating concepts such as gravitational and frictional forces.

### ToDo List: Cloud-based Note-Making Platform

March 2024 – May 2024

- Developed a responsive, cross-platform, serverless to-do list application using AWS EC2, API Gateway, and

DynamoDB, enabling real-time task creation, updates, and management. Implemented IAM for secure access control, configured Security Groups for network security, and used Django for the application's backend.

### **Intelligent Document Question-Answering System using RAG with PDF Processing**

*September 2024 – Present*

- Created a system that allows users to upload PDFs and ask content-based questions. Uses PyMuPDF for text extraction, Hugging Face Transformers for semantic search, and FAISS for fast retrieval.
- Developed with a FastAPI backend and React.js interface for handling uploads and Q&A interactions.

### **Technical Skills**

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- **Programming Languages:** C, C++, C#, Java, Python, HTML, CSS, JavaScript, PHP, R
- **Databases:** MySQL, MongoDB
- **Tools:** Git/GitHub, Unix Shell, VS Code, IntelliJ IDEA, Android Studio, Unity, phpMyAdmin, PowerBI, Google Colab, AWS
- **Frameworks/Libraries:** Hadoop, React, Django, Flutter, Firebase, TensorFlow, Keras, PyTorch, Hugging Face

### **Personal Projects And Co-curricular Activities**

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#### **Umanita**

- Designed and developed a platform enabling NGOs to create personalized websites using pre-designed templates and UI elements, simplifying the process of establishing an online presence.

#### **MyReckList**

- Developed a recommendation platform for movies and books based on user ratings, using the Alternating Least Squares (ALS) algorithm for collaborative filtering. The system analyzes user behavior to provide personalized, top 10 content suggestions, enhancing content discovery and user engagement.

#### **CareerCruise**

- Developed a student-focused platform during the Cognizant Digital Nurture Technoverse 2023. The platform offers aptitude assessments, career guidance, and resources for entrance exam preparation, providing personalized roadmaps to achieve career goals.

### **Courses And Certification**

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#### **Guided Projects and Courses on Coursera:**

- Amazon Echo Reviews Sentiment Analysis Using NLP
- English/French Translator: Long Short Term Memory Networks
- Data Analysis Using PySpark
- Medical Insurance Premium Prediction with Machine Learning
- Interactive Machine Learning Dashboards using Plotly Dash
- Deep Learning for Real Estate Price Prediction
- Generating New Recipes using GPT-2
- Learning Web Development

#### **Professional Certifications:**

- Google Cybersecurity Professional Certificate
- Introduction to Generative AI by Google Cloud Training

### **Extra Curricular Activities**

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#### **National Service Scheme (NSS) Club**

*August 2022 – July 2024*

- Organized and participated in various social initiatives, including beach cleaning drives, plantation drives, blood donation camps at colleges and railway stations, free health check-ups, and awareness drives on mental health, menstrual health, and yoga.
- Engaged in a 1-week NSS camp in an economically and socially disadvantaged village, conducting educational sessions, performing skits, and leading group activities with students and villagers to promote education and physical well-being.
- Awarded the Best Volunteer Award for outstanding contributions during the camp.
- Taught cybersecurity and cyberbullying awareness to students in grades 5 through 8 under the CRY (Child Rights and You) program.

#### **IEEE Club**

*August 2023 – July 2024*

- Organized and led seminars, workshops, and competitions as Deputy Program Committee Head.
- Conducted introductory sessions on STEM education for 9th and 10th grade students at local schools.

#### **Google Developer Student Club (GDSC)**

*September 2023 – July 2024*

- Managed and organized reports and documents related to club activities.
- Participated in and managed various coding competitions, tech seminars, and quizzes hosted by the club.

#### **Student Mentor**

*August 2023 – Present*

- Mentoring 1st and 2nd-year students in academic and co-curricular activities, providing guidance and support to help them succeed.