

ABHINAV RAJ SINGH | 20IM10001

INDUSTRIAL ENGG. (B.Tech 4Y)



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Year	Degree/Exam	Institute	CGPA/Marks
2024	B.TECH	IIT Kharagpur	8.77 / 10
2019	CBSE	RPS	87.6%
2017	CBSE	DAV PUBLIC SCHOOL	9.6 / 10

INTERNSHIPS

Amazon | Software Development Engineer Intern

May'23-Jun'23

- Developed a comprehensive onboarding system using Java for the backend, achieving 100% test coverage to ensure its robustness
 Seamlessly integrated the onboarding system with React enhancing the frontend functionality and ensuring backward compatibility
 Conducted comprehensive beta testing and successfully deployed frontend and backend changes into the production environment
- Achieved 430% reduction in page load times by implementing pagination and column filtering through internal API enhancements
- Enhanced database search capabilities by adding tsvector columns and applied changes using Liquibase on a cloned database

Aiyantr | Trainee Research Engineer

Jan'23-Mar'23

- Leveraged the use of MoveNet for real-time exercise key point tracking, ensuring precise data capture and analysis during workout routine
- Used Java/Kotlin in Android Studio to create a mobile app that identifies and quantifies exercises, providing real-time feedback to users
- Utilized Python in conjuction with a pre-trained model to validate exercise classifications, ensuring accuracy and improving reliability

PROJECTS

Movie Booking Site | Self Project

Nov'22-Jan'23

- Developed a responsive movie booking site using React, HTML and CSS to provide users with an intuitive platform for booking tickets
 Implemented Node.js, Express.js, and MongoDB technologies to establish a thoroughly seamless and efficient server-side infrastructure
- Implemented user registration, login/logout, and enriched user interaction through CRUD operations, bolstering data security

MultiPDF Interactor | Self Project

- Utilized Streamlit, PyPDF2, and LangChain to develop a chat application for extracting insights from multiple PDFs documents efficiently
- Successfully harmonized LangChain, OpenAl API, and HuggingFaceHubAPI, fostering natural interactions within the application
- Created an optimized system to extract PDF text, segment it, and enhance chatbot performance, ensuring data-driven insights

Predicting Estimated Rainfall in Flood Effective Regions

Aug'23-Present

Supervisor: Prof Jhareswar Maiti, Department of Industrial and Systems Engineering, IIT Kharagpur

- Conducted EDA on regional weather data, utilizing feature engineering to improve rainfall prediction models for flood-prone regions
- Employed LSTM, ARIMA models for data-driven flood risk mitigation, encompassing data collection, preprocessing, and model training
- The algorithm was fine-tuned to deliver a MAPE of 24.43% and an R-squared (R^2) of 0.812, indicating high predictable variance

Statistical Learning | Course Project | Prof Sayak Roy

- Coded LDA, QDA, SVM, KNN and Bayes algorithms classifiers from scratch, and validated results on 3 dataset using K-Fold and LOOCV
- Decreased RMSE by 34% using Tree-Based Algorithms, GAMs and Cubic Splines to predict 4 cybersecurity parameters from 15 features

AWARDS AND ACHIEVEMENTS

- Ranked nationally among the top 0.32 percent in the JEE MAIN 2020 out of 1.12 million+ applicants appearing for the examination
- Stood among the top 2.63 percent among 1 million+ active users, and achieved a rating of 2000+ on Leetcode (handle coder_pro2305)
- Achieved rank of 558 among 21.5k+ users registered in Leetcode Weekly Contest and earned a knight badge (handle coder_pro2305)
 Stood among top 4.23 percent among 0.397 million+ teams participated in Flipkart Grid 5.0-SD track 2023 (handle 686157-U7V4I51R).
- Stood among the top 5.08 percent nationally and achieved a maximum rating of 1450+ (specialist) in codeforces (handle codiway)
- Stood among the top 6 percent out of 50.5k+ teams that participated in TVS Credit E.P.I.C 5.0 IT Challenge 2023 (handleCdc)

SKILLS AND EXPERTISE

Languages and Frameworks: C++ | C | Java | R | JavaScript | HTML | Express.js | Python | React.js | CSS

Platforms and Tools: LT Spice | Falstad | Free Cad | MS-Word | MATLAB | Git | MongoDB | MySQL| Arena | CPlex | RStudio | Blender Libraries: Numpy | Pandas | Matplotlib | Streamlit | Scikit-learn | Datetime | Tensorflow-keras | Statsmodels | Seaborn | OpenCV

COURSEWORK INFORMATION

Computer Science: Programming and Data Structures (Theory + Lab)

Mathematics: Probability and Statistics | Modern Algebra | Transform Calculus | Linear Algebra and Complex analysis | Advanced Calculus Other: Statistical Learning With Applications | Recommender Systems in E-Business | Economics | Supply Chain Management | Financial Engineering | Simulation | Engineering Economy | Quality Design and Control | Operation Research | &II | Work System Design

POSITIONS OF RESPONSIBILITY

Core Organizing Team Member | Spring Fest

- Coordinated Mumbai sponsorship drive, raising over INR 0.31 million, marking a 13% YoY increase solely from alumni contributions
- Conducted the nationwide prelims in Patna across over four different genre achieving almost 90% YoY increase in participation
 Achieved a 138 percent YoY increase in registration count, coupled with 100% increase in entry count for Nrityakala event
- Coordinated International Carnival and Indie Carnival inviting artists from India, USA, Poland, Germany, Sweden and Ireland

EXTRA CURRICULAR ACTIVITIES

- Selected as a part of Choreography team of Lal Bahadur Shastri Hall of Residence in Inter-hall Gymkhana Competition
- Selected as a part of gold winning March Past team of Lal Bahadur Shastri Hall of Residence in Inter-hall Competition 2022