

AYUSH SAXENA

IIT Kharagpur

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Professional Summary

A dedicated student at IIT Kharagpur, adept in software development with a proven track record of academic excellence. Possesses hands-on experience gained from internships at TransOrg Analytics and Web Prism IT Solution. Proficient in Python, ReactJS, C++, AWS, and other technologies. Demonstrated expertise in data analysis, machine learning, and full-stack development.

Education

Indian Institute of Technology Kharagpur

Jul'19 – May'24

Ocean Engineering and Naval Architecture (Dual Degree) - CGPA: 7.69/10

Work Experience

TransOrg Analytics / Software Developer Intern

Jun'22 – Jul'23

- Engineered and maintained TransOrg Analytics & PicklAI systems with **Python** and proprietary in-house library for peak performance
- Sustained and updated companies' solutions on **AWS** using **EC2, Boto3, Route 53, and S3 buckets** for real-time modifications
- Introduced monitor users, sessions, IP addresses, and viewers per URL in the admin panel, **reduced costs** of external tracking services
- Enhanced admin panel security with **middleware & RBAC** to limit access to sensitive information exclusively to authorized personnel

Web Prism IT Solution / Software Developer Intern

May'21 – Jul'21

- Spearheaded **ReactJS, Python, Django, and Rest API** integration for seamless full-stack projects within a collaborative team
- Designed efficient and secure back-end systems with Django, **RESTful APIs**, authentication, and an optimized database architecture
- Engaged in **code reviews**, making substantive contributions, and embracing constructive feedback to cultivate continuous improvement

Projects

Machine Learning-Driven Turbulence Analysis/ MTech Project/ Guide: Prof. Hari Warrior

Jul'23 – Dec'23

- Developed an advanced neural network model to predict the **pressure strain** in turbulent flows, focusing on 8 different variables
- Utilized high-fidelity Direct Numerical Simulations (DNS) data, employing normalization for precise analysis and effective ML models
- Designed and meticulously trained a custom neural network specifically to accurately predict **Pressure Strain** in complex flow scenarios
- Achieved a Mean Squared Error **MSE of 8.777e-07**, **RMSE of 0.00093**, and an **R² of 0.998**, enhancing predictive accuracy by over **99.75%**

Learning Management System / IIT Kharagpur / Guide: Prof. Kaushal Kumar Bhagat

Jan'23 – Apr'23

- Developed a robust **Python-backed** web-based Learning Management System (LMS) by utilizing the comprehensive web tech stack
- Implemented user roles (**admin, organization, teacher, student**) with separate dashboards for an efficient course management system
- Established unique features for organizations, including teacher selection through **domain email IDs** and comprehensive user control
- Formulated **Analytics Dashboard** for the teachers: course **performance insights**, progress tracking, quiz integration in video lectures

Freelancers Marketplace / Self Project

Dec'21

- Established a freelancer marketplace with **Django (Rest), Python**, enhancing user experience through advanced search capabilities
- Orchestrated dynamic features, spotlighted profiles, skills, projects, and pioneering project-tag search for comprehensive exploration
- Innovated an **advanced comprehensive search engine**, enabling seamless exploration of freelancers' & projects' names, owners, tags

Competition/Conference

Bronze / General Championship / Open Soft / Meghnad Saha Hall of Residence, IIT Kharagpur

2022 & 2023

- Led team to **3rd rank in 2023**, built the dynamic financial and e-commerce product from scratch using comprehensive tech stack
- Orchestrated real-time database integration using **AWS RDS and a private database**, showcasing technical prowess in containerization
- Devised a resilient solution for transaction tracking, leveraging **AWS DynamoDB**. Crafted a functional product with **dual databases**

Positions of Responsibility

Events Head / NAROES, IIT Kharagpur

Jul'21 - Jul'22

- Led a team of **30+** members to manage the annual departmental fest Samudramanthan with **200+** international participation
- Managed & planned events such as Convocation, Induction program, & Panel talks from the Alumni for the department's students
- Initiated & managed **10+ events** from **ideation to execution**, including team structures, for seamless execution of Samudramanthan

Skills and Expertise

Languages: Python | C++ | JavaScript | C | SQL
Libraries: NumPy | Pandas | Matplotlib | Redux | ReactJS

Frameworks: Django (REST API) | AngularJS | Flask
Technical skills: API Integration | API design knowledge | AWS

Coursework Information

- Courses:** Programming & Data Structures, Mathematics-I, Mathematics-II, Transform Calculus, IFM, Technology Entrepreneurship
- MOOCs:** Algorithmic Toolbox by University of California San Diego, Data Analysis, DockerContainers and Kubernetes, FreeCodeCamp, System Design, Microservice Architecture and System Design, ReactJS, SQL

Extra Curriculars

- Community:** Served as an executive committee member at Sarth from **2019 to 2023**, an NGO run by IIT Kharagpur students
- Socult:** Member of the 2022 General Championship's short film-making team at Meghnad Saha Hall of Residence, IIT Kharagpur
- Sports:** Basketball & Cricket team member at Meghnad Saha Hall of Residence for the 2022 General Championship, IIT Kharagpur