

ABHISHEK SHREE

Third Year Undergraduate · Economic Sciences
Indian Institute of Technology Kanpur

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EDUCATION

| Year | Degree | Institution | Score |
|----------------|-----------------|---------------------------------------|----------|
| 2020 - Present | B.S., Economics | Indian Institute of Technology Kanpur | 8.8/10.0 |
| 2020 | CBSE – XII | Loyola High School, Patna | 95.2% |
| 2018 | CBSE – X | Loyola High School, Patna | 98.0% |

ACHIEVEMENTS

- Received the **Academic Excellence Award** for exceptional performance in Academics at IIT Kanpur
- Among the **top 25** teams(among more than 500 teams) in MIT's BattleCode 2021 Scrimmaging Rounds
- Among the **top 2.4%** of students, JEE Advanced 2020
- Among the **top 0.2%** of students, JEE Main 2020
- Among the **top 10%** programmers on Hackerearth in 2017

KEY PROJECTS

Digital Alpha SaaS Analyser Inter IIT Tech Meet 10.0
🔗 SaaS-Analyzer March 2022

- Developed a scalable web app and an ML pipeline to analyze SEC filings and obtain SaaS metrics for companies
- Parsed** relevant sections (10K, 10Q and 8K) of the SEC Filings using BeautifulSoup and some external APIs
- Extracted SaaS metrics using NER, window search algorithm, used FinBERT (SOTA) to **analyze sentiments** along with section **summarization** using legal-pegasus
- Developed Frontend in **React**. Gave a modern look to UI using plugins like Chart.js to meet the problem statement
- Won the **Silver Medal** contributing to the **overall 2nd position** of IIT Kanpur among the **22** participating IITs

IITK Coin Summer Project, Programming Club
🔗 IITK-Coin May 2021 - December 2021

- Developed a Go and React-Native application for a centralised **pseudo-currency** system for use in IITK
- Built the UI using custom components, axios, secure-store and redux, allowing multiple states and app navigation
- Involved Database Management, User **Authentication**, Hashing & Salting and User Session Validation with JWT
- Built robust REST APIs to handle **concurrent** transactions and multi-level user permissions

Autonomous Underwater Vehicle Team AUV-IITK
Faculty Advisor: Prof. Indranil Saha April 2021 - Present

- Improved the team website 🌐, which ranked **3rd** amongst **52** participating teams in **Robosub, 2021**, the largest competition for student-built AUVs in the world
- Utilized **Extended Kalman Filters** based SLAM algorithm to enhance pose estimation and navigation
- Implemented and researched the efficiency of graph-based, probabilistic, and deep learning-based SLAM algorithms like FastSLAM and RatSLAM in underwater conditions

MCMC Methods in Julia Summer Project, Stamatics
🔗 MCMC-Methods-in-Julia April 2022 - June 2022

- Implemented sampling methods including Accept-Reject, Inverse Transform and Importance Sampling techniques
- Learned the mathematics behind Bernoulli Factories, Bayesian Models, MLE, Regression, and Markov Chains
- Implemented MCMC algorithms like Metropolis-Hastings, Gibbs Sampler, Barker's and portkey Barker's algorithm

SKILLS

Programming: Go, Typescript, C++, Python, Julia

Web: Gin, Flask, Fiber, React.js, Next.js

Databases: PostgreSQL, MongoDB, Redis

Misc: Git, Bash, AWS, Docker, Nginx, ROS, L^AT_EX

WORK EXPERIENCE

Product Engineer March 2022 - June 2022
Students' Placement Office, IIT Kanpur

- Created Recruitment Automation System for use in IITK by over **500 companies** and **2500 students** in the upcoming placement and internship phases each year
- Delivered enhanced security, scalability and achieved an **improvement** in response time by approximately **60%**
- Designed and built a **microservice** based backend with more than 150 endpoints in **Go** including context models, an async mailing system, a Content Delivery System
- Built a responsive frontend in **Next.js**, with features including type-based API calls, notifications, data filtering, a persistent store, Lazy Loading, page-level auth and RTE
- Ideated and wrote **CI/CD pipeline** for smooth deployment, orchestrated using **Nginx** and **Docker**
- Details about the solution architecture are available here 🌐

Cybersecurity Engage Program May 2022 - June 2022
Microsoft

- Explored various aspects of cybersecurity including Cyber Forensics, Network Security and Malware Analysis
- Wrote a paper on *Safeguarding Indian Telecommunication Services* from a zero-day attack [Also accepted at IJISRT]

POSITIONS OF RESPONSIBILITY

Web Head IIT Kanpur
Students' Placement Office March 2022 - Present

- Leading** a team of **5** Executives and **3** senior developers
- Maintaining the organization's servers and VM, designed new infrastructure including the website, CDN, and portals
- Solved critical networking challenges while various deployments within IITK and SPO internal networks

Team Head | Software Subsystem IIT Kanpur
Team AUV-IITK May 2022 - Present

- Leading a team of 50+ undergraduates to participate in international marine robotics competitions including RoboSub 2023 and SAUVC 2023
- Responsible for improving the software stack and design of our third generation **AUV-Tarang**

Secretary IIT Kanpur
Programming Club September 2021 - April 2022

- Among the **25** selected secretaries responsible for managing various activities and sessions pertaining to the club

RELEVANT COURSES

Game Theory & Mechanism Design Real Analysis
Probability & Statistics* Fundamentals of Computing*
Linear Algebra & ODEs* Introduction to Electronics*
Data Structures & Algorithms^u Econometrics^u
u: Upcoming *: Perfect grade in the course

EXTRACURRICULAR

- Mentored **30 students** in a project under Stamatics, covering Number theoretic theorems and their applications
- Helped **6 freshers** assimilate to IITK norms and **assisted** Counselling Service conducting Freshers' Orientation
- Maintain a personal webpage and blog at abhishekshree.xyz