

# ABHISHEK SHREE

Third Year Undergraduate · Economics  
Indian Institute of Technology Kanpur

✉ shreea20@iitk.ac.in · 📞 (+91) 995-596-0224

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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 academic performance in 2020-21 academic session
- Among the **top 25** teams(among 500+) in MIT's Battle-Code 2020 Scrimmaging Rounds
- AIR 4917**, JEE Advanced 2020, among 150K candidates
- AIR 2689**, JEE Main 2020, among 1.1 million candidates
- 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 22 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 Campus
- 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, LaTeX

## WORK EXPERIENCE

**Product Engineer** March 2022 - June 2022  
Students' Placement Office

- Created Recruitment Automation System for use in IITK by over **500 companies** and **1700 students** in the coming recruitment phase this year
- Enhanced security and achieved an **improvement** in response time by approximately **60%**
- Spearheaded** a team of 2 Lead and 6 Junior developers
- 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
- Submitted a paper on *Safeguarding Indian Telecommunication Services* from a zero-day attack on the Indian soil

## POSITIONS OF RESPONSIBILITY

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

- Leading a team of 5 Web Executives
- 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 like RoboSub 2023
- Responsible for improving the software stack and design of our 3rd generation **AUV-Tarang**

**Secretary** IIT Kanpur  
Programming Club September 2021 - April 2022

- Among the **25** selected secretaries responsible for various activities of the club

## RELEVANT COURSES

Game Theory & Mechanism Design Real Analysis  
Probability & Statistics\* Fundamentals of Computing\*  
Linear Algebra & ODEs\* Introduction to Electronics\*  
Data Structures & Algorithms<sup>u</sup> Econometrics<sup>u</sup>  
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