Abhishek Shree

Quantitative Technologist · Qube Research and Technologies
Indian Institute of Technology Kanpur · Economic Sciences, Minor in AI

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Education

Year	Degree	Institution	Score
2024	B.S. Economic Sciences	Indian Institute of Technology Kanpur	8.7/10.0
2020	CBSE – XII	Loyola High School	95.2%
2018	CBSE – X	Loyola High School	98.0%

Honors & Awards

2024 **Science and Technology Excellence Award** (Graduating Class), IIT Kanpur
2024 **Best Socially Relevant Project Award** to RAS, 57th Convocation, IIT Kanpur
2022 **Academic Excellence Award** for exceptional performance, IIT Kanpur
2021 **Top 25 Team** (out of 500+ teams), MIT BattleCode Scrimmaging Rounds
2020 **Top 2.4%**, Joint Entrance Exam (JEE) Advanced
2017 **Top 10%** Programmers, HackerEarth Global Ranking

Work Experience

Quantitative Technologist
Qube Research & Technologies — *May'23 - Jul'23, Jul'24 - Now*

- Part of the largest desk at QRT developing with the Data and Signal Platform team, trading Mid to Low frequency signals
- Built distributed data pipelines & compute frameworks for petabyte-scale market & alt-data, improving resilience and throughput
- Work with CTA, power trading desks and generalist quants, optimizing strategy execution workflows within the framework
- Designed and implemented a full-stack alpha permissioning system with a custom diffing algorithm for safe incremental updates

Research Consultant
WorldQuant — *Nov'23 - May'24*

- Developed and submitted alphas in US and China Equities with net sharpe ratio ~2, in a medium-low frequency horizon
- Implemented genetic algorithms and clustering pipelines to automate factor generation, accelerating the research cycle

Product Engineer Intern, Infrastructure
Paradime.io — *Aug'22 - Mar'23*

- Developed a Kubernetes vulnerability scanner with secure, automated assessments based on trivy, orchestrated through Airflow
- Built a multi-layered Kubernetes monitoring stack with Prometheus and AWS Grafana for centralized, actionable metrics
- Built a secure, Kubernetes UI with RBAC and internal VPN access, with robust alerting for node and scaling group health

Product Engineer
Students' Placement Office, IIT Kanpur — *Mar'22 - Jun'22*

- Rolled out Recruitment Automation System (**RAS**) for use by over 1200+ companies and 3000+ students every year
- Developed a microservices-based backend in GoLang, an async mailing system, and a content delivery system
- Designed feature-rich frontend in NextJS, including notifications, lazy loading, page-level auth etc. with zero downtime
- Ideated and wrote CI/CD pipelines, orchestrated the system using GitHub Actions, Nginx reverse proxy, and Docker

Research Work

Undergraduate Project: Dynamic Programming
UGP Report
Prof. Joydeep Dutta — *Aug'22 - Jan'23, Jan'24 - May'24*

- Traced the evolution of Dynamic Programming by contrasting Bellman's original work with Bertsekas's discrete-time models
- Established existence and uniqueness of Bellman equations in metric spaces, which got me interested optimization theory
- Derived optimal closed-loop policies for stochastic systems, with risk-sensitive objectives via modified Bellman recursions
- Awarded the highest possible grade (A*) across three consecutive Undergraduate Projects for theoretical novelty and rigor

Skills

Programming Python, Rust, Go, C++, JavaScript, Scala, Haskell
Utilities Git, Shell Scripting, Docker, GDB, Pants, Make, LaTeX

Key Projects

Route Planning for Optimized Delivery

GrowSimplee

Inter IIT Tech Meet 11.0 *Jan'23*

- Created an end-to-end application for optimal route planning, with multiple constraints (bag size, work hours, etc.)
- Used Local Guided Search to navigate the huge search space efficiently to find a solution with least penalty in a reasonable time
- Designed a system to include a real-time distance and time matrix of the delivery locations using OSRM and Bing Maps API
- Won the **Bronze Medal** contributing to the overall 3rd position of IIT Kanpur among the 21 participating IITs

Digital Alpha SaaS Analyser

SaaS-Analyzer

Inter IIT Tech Meet 10.0 *Mar'22*

- Built ML pipeline and web app to analyze SEC filings and extract key SaaS financial metrics for public companies
- Applied named entity recognition, contextual windowing, and section-wise summarization using Legal-Pegasus
- Won the **Silver Medal** contributing to the overall 2nd position of IIT Kanpur among the 22 participating IITs

Autonomous Underwater Vehicle

Faculty Advisor: Prof. Indranil Saha

Team AUV-IITK *Apr'21 - May'24*

- Ranked **3rd** amongst **52** participating teams in **Robosub, 2021**, the largest competition for student-built AUVs in the world
- Won the **National Gold Medal** at Robofest (Gujarat Govt) for engineering a compact autonomous underwater ROV
- Experimented with various SLAM algorithms, FastSLAM, RatSLAM, etc., to improve the AUV's autonomous mapping capabilities
- Worked on writing drivers, denoising, & integration of SOTA Waterlinked DVL based on serial communication

Positions of Responsibility

Web Head

Students' Placement Office (SPO)

IIT Kanpur *Mar'22 - Apr'23*

- Spearheaded a team of 8, ensuring efficient collaboration, on-time project delivery and smooth inter-team coordination
- Managed maintenance of SPO physical server and Virtual Machine, ensuring seamless operations and minimal downtime
- Designed new infrastructure, including website, CDN, and portals, improving the overall user experience and efficiency

Team Head | Software Subsystem

Team AUV-IITK

IIT Kanpur *May'22 - Apr'23*

- Led a team of 50+ undergraduates to participate in international marine robotics competitions, including RoboSub 2023
- Led sponsorship outreach, securing partnerships with leading hardware firms like Waterlinked and PCB Power
- Responsible for improving the software stack and mechanical design of the third-generation AUV-Tarang

Relevant Coursework

Data Structures & Algorithms
Economics of Uncertainity & Information
Game Theory & Mechanism Design
Software Engineering
Linear Algebra & ODEs
Econometrics
Machine Learning
Quantitative Methods
Probability & Statistics
Behavioural Economics
Big Data Visualisation
Real Analysis