Abhishek **Shree**

Sophomore Undergraduate · Economics

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Education

Indian Institute of Technology Kanpur	*Kanpur, India*
B.S. in Economics - 9.2/10	*Nov. 2020 - Present*
Loyola High School	*Patna, Bihar*
CLASS XII CBSE BOARD - 95.2%	*2018 - 2020*
Loyola High School	*Patna, Bihar*
CLASS X CBSE BOARD - 98%	*2008 - 2018*

Projects

IITK Coin Frontend Application — ○ `iitk-coin-native-app`

With Bhuvan Singla (Y18), Harshit Raj (Y20) and Somya Gupta (Y20) — *September 2021 - Present*

- Developing the frontend application (in React Native) for IITK Coin to be used in IITK campus.
- Implemented various components for the app including a secure storage to save JWT tokens received upon login.
- Also responsible for integrating and testing the backend APIs with the app for a smooth user experience.

IITK Coin — ○ `iitk-coin`

Mentor: Bhuvan Singla (Y18) | SUMMER PROJECT, PROGRAMMING CLUB — *May 2021 - July 2021*

- Developed a centralised pseudo-coin system in GoLang for use in IITK Campus.
- Built robust REST APIs with multi-level user permissions.
- Involved Database Management, Password Authentication with Hashing and Salting and User Session Validation with JSON Web Tokens (JWTs).
- Various techniques such as concurrency and deadlock prevention were implemented to keep transactions safe and quick and maintain ACID properties.

Numbers Made Dumber — ○ `Numbers-Made-Dumber`

SEMESTER PROJECT, STAMATICS — *April 2021 - July 2021*

- Worked on understanding algorithms like Euclid's Algorithm and it's immediate consequence like Bezout's Identity, Linear Diophantine Equations, etc.
- Worked on primes like Fermat and Mersenne Primes, primality tests like Lucas–Lehmer Test, Miller-Rabin Test and other ideas involving primes.
- Explored the concepts of Linear and Non-linear congruence, Chinese Remainder Theorem, and its applications.
- Explored the ideas involved in cryptography, including group theory. Implemented the RSA Encryption Algorithm as an exercise in Haskell.

Gnix — ○ `gnix`

SELF PROJECT — *May 2021*

- Implemented some basic UNIX Commands like ls, pwd, cat, touch, sleep, whoami, grep (basic search) in golang.
- Used Make to automate the build process.

Handpose Emote Detection — ○ `handpose-emote-detection`

SELF PROJECT — *March 2021*

- Developed a react application which utilized React Webcam to detect hand gestures namely, thumbs up and peace sign.
- Read and understood how to mediapipe handpose model works and used it with tensorflow.js.

Android Chat Application — ○ `Android-Project`

SELF PROJECT — *January 2021*

- Developed a chat application for android (in Java).
- Applied the ideas of Android UI development including different types of views and their life-cycle.
- Used firebase auth, storage and database for the backend and integrated them with the application.

Technical Skills

Programming	C/C++, Golang, Bash, Javascript, Typescript, Python, Haskell, Java
ML Tools	PyTorch, Keras, Tensorflow, Scikit-learn
Development	Django, Flask, Fiber (Go), Jekyll, Next.js, React, React Native, Redux, HTML5, SASS
Utilities	Docker, Git, Heroku, PostgreSQL, SQLite, MongoDB, Firebase, Insomnia, Selenium, Vim, Emacs (Spacemacs), LaTeX
OS	Manjaro, Ubuntu 20.04 (with i3wm), Windows (WSL)
Robotics	ROS Noetic, Gazebo

Relevant Courses

Introduction to Electronics^i
Fundamentals of Computing
Deep Learning Specialization^o

Introduction To Game Theory And Mechanism Design^{i,p}
Linear Algebra & ODEs
TensorFlow Developer^o

Microeconomics I^i
Real Analysis
GAN Specialization^o

i: In progress

o: Online Course

p: PG Course

Positions of Responsibility

Team Member
AUV, IIT KANPUR

India

April 2021 - PRESENT

- Worked on improving the team website, which ranked 3rd in Robosub, 2021.
- Currently working in the software subsystem, dealing with robot mapping (SLAM).
- Implemented Kalman filters based localisation technique to filter tackle the mapping problem, integrated the algorithm with ROS to work with real world sensor data.

Secretary
PROGRAMMING CLUB, IIT KANPUR

India

Sept 2021 - PRESENT

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

Student Guide
COUNSELLING SERVICE

India

Oct 2021 - PRESENT

- Selected to assist a group of 5 freshmen academically and emotionally, to get acclimatized with the new college environment

Notable Mentions

- Among top 25 teams(among 500+) in MIT's BattleCode 2020 Scrimmaging Rounds.
- Among the top 3% students in the country, JEE Advanced 2020.
- Among the top 0.2% students in the country, JEE Main 2020.
- Maintain a personal web page and blog at shreee.me