Arun Kumar

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B.Tech - Mathematics and Computing
Indian Institute Of Technology, Guwahati

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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech.	Indian Institute of Technology, Guwahati	6.53 (Current)	2020-Present
Senior Secondary	CBSE Board	95.8%	2020
Secondary	CBSE Board	10.0	2018

PROJECTS

- **Multicast Streaming Application** — *Jan. 2023 - Mar. 2023*
  Group Project — Github
  - Developed a **C++** video streaming app that enables multiple receivers to watch a live stream video simultaneously.
  - Created three apps: receiver, sender, and tracker. Tracker provides coordination between the receiver and sender.
  - Designed a user-friendly GUI using **GTK** and converted videos into a streamable format using **ffmpeg**.
  - Employed multiple networking and coding principles such as **multicast broadcasting**, **socket programming**, **object-oriented programming** and **multithreading**.

- **Operating System - xv6** — *Sept. 2022 - Dec. 2022*
  Course Project, CS344 - Operating Systems Lab — Github
  - Implemented a **SJF** and **Round Robin** based hybrid scheduling algorithm and tested it for CPU.
  - Incorporated **lazy memory allocation** and **dynamic paging using LRU** replacement mechanism for active processes.

- **E-Commerce website** — *Jan. 2023 - Mar. 2023*
  Personal Project — Github
  - Developed an **e-commerce web application** from scratch to facilitate online transactions of goods.
  - Implemented payment gateway using **Stripe**, ensuring seamless and secure transactions.
  - Implemented a **search filter** by price and relevant categories of products for convenient browsing of products.
  - **Tech Stack:** React, NodeJS, MongoDB, Tailwind CSS, Stripe.

- **AI-Powered 3D website** — *May. 2022 - June. 2022*
  Personal Project — Github
  - Developed a web application that is used for loading, creating, and customizing 3D models.
  - Integrated **DALL.E AI** to create a unique feature that enables automatic generation of images based on user inputs.
  - **Tech Stack:** React, ThreeJS, Tailwind CSS.

TECHNICAL SKILLS

- **Programming Languages**: C/C++, Python*, MATLAB*, JavaScript
- **Web Technologies**: HTML, CSS, Tailwind CSS*, React, NextJS*, NodeJS
- **Database management**: MySQL, MongoDB
- **Operating Systems**: Windows, Linux*   *Elementary proficiency*

ACHIEVEMENTS

- **Joint Entrance Examination 2020**: Secured **AIR 2976** (Advanced) and **AIR 1076** (Mains) among 0.16 and 1.15 million candidates respectively.

KEY COURSES TAKEN

- **Computer Science**: Data Structures[+], Design & Analysis of Algorithms, Operating Systems[+], Computer Architecture & Organisation, Computer Networks[+], Database Management Systems[+], Advanced Data Structure and Algorithm, Theory of Computation.
- **Mathematics**: Statistical Inference and Multivariate Analysis, Monte Carlo Simulation[+], Scientific Computing[+], Probability & Random Processes, Stochastic Calculus for Finance, Financial Engineering - I & II[+].

[+]*Includes Lab*

EXTRACURRICULARS

- **Saathi Counselling Club**: Mentored first-year MnC students under the Peer Mentorship Program of Saathi Club.
- **Electronics Club**: Core team member of the Electronics Club of IIT Guwahati, since 2021.
- **Athletics**: Completed a non-credit NSO course offered by the Institute.