



Somanshu Rath

Roll No. 2022A7PS0032G

B.E. Computer Science

BITS Pilani

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Education

B.E. Computer Science

BITS Pilani

Oct 2022 - May 2026

CBSE Board - Senior Secondary

M.K.V.V.I Vidyalaya, Mumbai

May 2022 93%

ICSE Board - Secondary

Bhaktivedanta School, Mumbai

Mar 2020 98.6%

Experience

Backend Intern - Mira3D (Samisan Tech)

Hybrid Internship — Mumbai, India

Dec 2024 - Apr 2024

mira3dp.com

Collaborated in development on latest additive manufacturing software of Mira3D, developing backend logic for STL file repair using computational geometry concepts in C++ and optimizing for ElectronJS based frontend rendering using Node API.

Improved hole filling and shell repair time by about 28% by devising custom repair algorithm with low level implementation in C++.

Web Developer Intern - Sleepum Therapeutics

Remote Internship — Goa, India

Aug 2024 - Oct 2024

portal.sleepum.app

Collaborated on the 0 to 1 product launch of a doctor-user consultation and booking platform.

Developed a responsive and intuitive user interface using React, Redux, and Bootstrap, ensuring smooth navigation, optimized performance, and seamless integration with back-end features for user appointment scheduling and admin dashboard.

Summer Intern - Swecha Telangana

Onsite Internship — Hyderabad, India

May 2024 - Jul 2024

rb.gy/kywce2

Facilitated development of Swecha's Telugu Corpus App, collaborating closely with the team for timely delivery to Telangana ITE&C and Swecha's Telugu LLM Datathon in July 2024.

Implemented the service for uploading handwritten text to support Swecha's Telugu OCR project, utilizing Hive and AppWrite storage integrated with Flutter frontend.

Projects

Trade-Master

Personal Project — Quant Application

Feb 25 - Mar 25

rb.gy/468dno

Developed a C++ trading application with an independent UI layer using ImGui and ImPlot, integrating WebSocket-based market data visualization. Optimized network communication with WebSocket++ using multi-threading and immediate mode rendering using ImGui. Includes backtesting EMA crossover strategy over market history.

Soundwave

Personal Project — Distributed Systems

Oct 24 - Present

rb.gy/xts4tr

Developed a real-time audio processing pipeline with Apache Kafka and Apache Flink, enabling seamless ingestion, processing, and storage of multi-source audio streams.

Integrating pitch modulation and noise reduction for enhanced data quality, with robust fault tolerance across consumer nodes.

Geo-compute

Personal Project — Computational Geometry

April 24 - Present

demo link

Developed an interactive graph visualization tool using React.js and Three.js for constructing and analyzing graphs, enabling users to add nodes, edges and apply algorithms to improve graph visualization.

Implemented advanced graph layout algorithms like Fruchterman-Reingold and Radial Tree Layout for efficient graph rendering.

Flappy Square

Personal Project — Game Development

Sep 23 - Dec 23

rb.gy/ypdt1v

Designed and built an engaging arcade game with JavaScript and the p5.js library, incorporating custom game physics, score tracking, and responsive controls for an immersive, interactive experience.

Note-it

Personal Project — Web Development

Aug 23 - Oct 23

rb.gy/nkpgbu

Developed a MERN based note taking website featuring diverse functionalities and implemented essential user-level account system and customizable note options.

Technical Skills & Key Courses Taken

Mathematics: Probability and Statistics, Differential Equations, Linear Algebra

Computer Science: Network programming, Data Structures and Algorithms, Object-Oriented programming, Database Systems, Microprocessors, Data Storage Tech & Networks, Operating Systems, Machine Learning

Programming languages: C++, Python, C, Javascript, Java, MATLAB

DBMS: MySQL, MongoDB, Postgres

Libraries/Frameworks: ReactJS, NodeJS, Apache Kafka & Flink, PyTorch, Flutter

Operating System: Linux, Windows

Certificates

Supervised Machine Learning: Regression and Classification by Andrew Ng

Jun 2023

Successfully completed an online course by DeepLearning.AI and Stanford University offered through Coursera

rb.gy/ry3bgq

Scholastic Achievements

Competitive Programming

Specialist on Codeforces, current rating **1415** (Handle: somniac).

2024

Joint Entrance Examination (Advanced)

Obtained a All India Rank of **5300** of the total 1,60,000+ students.

2022

Indian National Junior Science Olympiad

Qualified for INJSO on the basis of NSEJS 2018 performance, was in the top **300** students selected from 41278 candidates.

2019