

DEEPAK SANGLE

4th year Undergraduate | Computer Science & Engineering | Indian Institute of Technology, Kanpur

@ deepaksangleok@gmail.com

Deepak-Sangle

deepak-sangle-684218212

https://deepak-sangle.github.io/

EDUCATION

Indian Institute of Technology, Kanpur

Undergraduate | Major, CSE

CGPA: 8.1/10

2020 - Present

Kanpur, India

Sarosh Junior College, Aurangabad

XII, MSBSHSE

Percentage: 91.1%

2020

Maharashtra, India

St. Meera School, Auranagabad

X, MSBSHSE

Percentage: 93.4%

2018

Maharashtra, India

SCHOLASTIC ACHIEVEMENT

- All India Rank **1672** in JEE Mains 2020 among 1.5 million aspirant
- All India Rank **985** in JEE Advanced 2020 among 150,000 shortlisted candidates.
- Qualified First stage of **National Talent Search Examination (NTSE)** organized by NCERT.

SKILLS

C, C++, C#, Java, Javascript, Typescript, Python, Haskell, Ruby, Verilog

HTML5, CSS3, React, React Native, Node, Express, Redux, MongoDB, Nestjs, Webgl,

Spring Framework (Boot, Cloud, Web), MySQL, Hazelcast Cache, Vert.x, .NET, WPF

Git, Bash, Postman, Sentry, Cloudwatch

OTHER WORKS

- Currently engaged in an undergraduate **Research Project** focused on **Multiparty Computation**, optimizing current **cryptography protocols** of implementing **local clustering** in multiple **distrusting data owners**.
- Applied in-depth knowledge of **C#, Windows Presentation Foundation (WPF)** and the **.NET framework** to enhance functionalities of **Microsoft PowerToys** suite by resolving critical issues in it's Open Source Github Repository.
- Implemented a course project on **lambda calculus** grammar checker, free variables, substitution, and beta reduction involving algorithms for **recursive descent parser**.
- Simulated **external merge sort** algorithm in **C++** to enhance sorting performance on **large datasets** using advanced techniques for optimal **disk-based sorting** like **multiway merging** and **buffer management**.

WORK EXPERIENCE

Backend Developer Intern - Zaapi

Singapore

August 2023 - Present

- Developed various back-end **API endpoints and web-hooks**, involving integration with **external APIs** of Facebook, Line, Shopee and Lazada.
- Collaborated closely with cross-functional teams to investigate and rectify technical issues by conducting thorough root-cause analyses

Software Developer Intern - Visa Inc.

Bangalore, India

May 2023 - July 2023

- Architected a highly **adaptable microservices platform** where developers can integrate their own utility services **on demand**.
- Implemented back-end services for **evicting distributed caches**, reducing the process time from manual hours to seconds.
- Engineered a robust microservice to query data across **15+ tables**. Leveraged **parallel threading and reactive programming** techniques in **Vert.x** to achieve **10-fold** reduction in response time.

Frontend Developer Intern - Floworx

Remote

May 2022 - July 2022

- Led** the Frontend team in developing a **Mobile application** for **Android and IOS Platform** used by **Real Estate Mobility Solution**.
- Collaborated closely with the backend and UX/UI teams to develop **40+ UI Screens** in **React Native** using **Material Design library**.
- Employed **Redux toolkit** for state management resulting in responsive and dynamic frontend interface along with **integration with backend**.

TECHNICAL PROJECTS

Comiler Design

Instructor: **Prof. Swarnendu Biswas**

Jan 2023 - Apr 2023

- Created basic Java compiler in **C++**, to translate Java source code to **x86_64** architecture-based **Assembly language**.
- Performed **lexical, syntactic and semantic analysis** using **Flex and bison libraries**, created **Abstract Syntax Tree (AST)** of source code, generated appropriate **error messages**, created **Intermediate Representation (IR)** of the source code, handled storage allocation on **Control Stack** and created **highly portable** assembly language code.

mIIT-Kute

Instructor: **Prof. Indranil Saha**

Jan 2022 - Apr 2022

- Designed, Implemented, Tested, and Deployed a **Social Networking Web-app** which helps communicate with people.
- Led the end-to-end **software development life-cycle**, documenting design, architecture, testing, and user manual.
- Implemented back-end server using **Node and Express**, setup database in **MongoDB**, used **Mongoose** library, handled backend integration and used **Nodemailer JS** library for email verification.

Bite Buddy

Instructor: **Prof. Arnab Bhattacharya**

Mar 2023 - Apr 2023

- Worked in a team of 5 to develop a **full-stack web application** centered around displaying nearby restaurants and their menus.
- Developed and implemented an **entity-relationship model (ERM)** and **normalized database schemas** to capture the data requirements of the web app.
- Developed complex **SQL queries** to facilitate seamless data retrieval maintaining features like **pagination, query optimization, and indexing**.

POSITIONS OF RESPONSIBILITY

Secretary, Game Development Club

IIT Kanpur

Aug 2021 - May 2022

- Conducted Introductory Lectures, Workshops, and Game Jams, teaching **140+ students** about the basics of Game Development using **Unity Engine**, **C# Scripting language** and **Blender**.
- Mentored **20+ freshers students** about the basics of 3D modelling concepts during the SnT Summer Projects.

COURSEWORK

- Operating Systems
- Compiler Design
- Computer Organization
- Advanced Algorithms
- Computer Graphics
- Computer Networks (A)
- Theory of Computation (A)
- Logic in CS
- Software Development & Operations (A)
- Data Structures & Algorithm
- Mathematics for Computer Science (A)
- Fundamentals of Computing
- Principles of Programming Languages (A)
- Database Management Systems
- Introduction to Machine Learning (A)

MINOR PROJECTS

Spam Mail Detection

Instructor: **Prof. Indranil Saha**

April 2022

- Classified the datasets of emails as spams or non-spams using Machine Learning Algorithms, **SVM** and **K Nearest Neighbouring**.

Library Management System

Instructor: **Prof. Indranil Saha**

Mar 2022

- Implemented a Library Management System, completely in **C++** using Object Oriented Programming and **SOLID** principles.

Computer Graphics

Instructor: **Soumya Dutta**

Aug 2023 - Present

- Familiarized with the basics of Computer graphics theories and concepts and implemented them using **Webgl2** library in javascript.
- Rendered basic **2D objects** with affine transformation and **animation**.
- Implemented **3D Modelling**, **Phong and Goroud Shading techniques**, **Texture Mapping**, **Environment reflection** and **planar reflection**.
- Implemented various advanced techniques like **Ray Tracing**, **Post-processing of textures**, **multi-pass rendering** and **shadow mapping**.

DMS Website

Self Project

Oct 2022 - Present

- Designed an E-commerce platform, creating **Distributed Systems** of various micro-services for high scalability.
- Handled **Passport.js** authentication to secure sensitive routes. Managed user sessions and persistent logins using **Cookies**.
- Created highly scalable and distributed **Microservices in Java Spring Framework**, implemented **API Gateway**, fault tolerance using **Circuit breakers**, **Load balancing**, **Distributed Tracing** and **Service registry** using **Spring Cloud**.

SAT

Instructor: **Prof. Subhajit Roy**

Jan 2022 - Mar 2022

- Created a **SAT solver** in C++, which established satisfiability of a CNF clause. It takes the **Boolean logic formula** as input and returns the combination of variables that can satisfy it or **UNSAT** if no such combination exists.
- Created **Sudoku Pair Solver** which solves the given two Sudoku grids while keeping their corresponding cells different.
- Implemented a **Sudoku Pair Generator** that creates two valid sudoku pair with **unique solutions** and **maximum holes**.

Dear Diary

Self Project

May 2023 - June 2023

- Developed a **secure single-page progressive application** for storing users' daily experiences in **React.JS** with offline capabilities.
- Implemented **JWT-based authentication and authorization** along with **SHA Algorithm** based Password Hashing.
- Employed **key management** technique along with **RSA cryptography algorithm** to implement end-to-end encryption.

Drift Maniac

Fall Game Jam

Sept 2021 - Oct 2021

- Designed and implemented an engaging **Endless 3D Runner Game** and deployed it on **Windows and Android Platform**.
- Used Physics System, Procedural Generation, Audio engine, Particle Collision, Behavioral Scripting in **Unity and C#**.
- Sculpted 3D Player in **Blender** and implemented UV unwrapping, Keyframe Animations, and character rigging.