

# Saransh Shivhare

✉ sshivhare@gmail.com | +91-9424717376

🌐 sshivhare.vercel.app | 🔗 linkedin.com/in/saransh477 | 🐙 github.com/saranshg20

## SKILLS

**PROGRAMMING LANGUAGES** | C | C++ | PYTHON | JAVASCRIPT

**BACKEND** | NODEJS | EXPRESS | FLASK | SQL | MONGODB

**FRONTEND** | HTML | CSS | TAILWIND | REACT | NEXT

**UTILITIES** | GIT | LINUX SHELL | DOCKER | KUBERNETES | JENKINS

## EXPERIENCE

**SAMSUNG RESEARCH** | RESEARCH AND DEVELOPMENT INTERN

May 2023 – July 2023 | Bangalore

- Designed an upsampling and downsampling algorithm for stereo audio in VoLTE calls, further extended it to multiple channels and determined the bottleneck
- Implemented and tested the algorithm using Librosa library in Python and explored multiple sample reconstruction techniques
- Proposed algorithm supports the stereo effect over calls, enhancing user experience

**MADHAV LAB, SURGE** | RESEARCH AND DEVELOPMENT INTERN

May 2022 – July 2022 | IIT Kanpur

- Integrated C++ Oboe audio library, for high performance audio in Narottam Andoid App
- Enhanced audio performance by 88%, reducing latency from 10ms-250ms to 0ms-25ms
- Resolved major frontend and backend issues, enhancing the overall user experience

## KEY PROJECTS

**POM DEPENDENCY PARSER** | SELF PROJECT | 🐙

Feb 2024

- Developed web app using React.js, Tailwind & Flask framework for REST API endpoints
- Integrated GitHub OAuth2.0 for user authentication, enabling secured access to user data
- Utilized lxml library in python scripts, extracting dependencies from the repository
- Deployed frontend on Vercel and backend on Render, utilized CORS and GitHub Access Tokens for secure and authorized repository access

**YOUTUBE BACKEND CLONE** | SELF PROJECT | 🐙

Dec 2023 – Jan 2024

- Designed a backend with 20+ relevant API endpoints, leveraging MongoDB and Express for efficient operations
- Engineered database models, optimized data retrieval with MongoDB aggregate pipelines
- Achieved secure file uploads and user verification using Cloudinary, Multer & JWT

**MELODY EXTRACTION AND ANNOTATION TOOL** | UG PROJECT | 🐙

Jan 2023 – Apr 2023 | Prof. Vipul Arora, EE IITK

- Delivered a reliable tool supporting accurate dataset preparation for music information retrieval machine learning models
- Created REST APIs using Flask for seamless frontend-backend communication in the tool
- Enhanced user experience using interactive libraries like Plotly.js, Chart.js, & Wavesurfer.js

**ACOUSTIC EVENT CLASSIFICATION** | EE603A COURSE PROJECT | 🐙

Aug 2022 – Sep 2022 | Prof. Vipul Arora, EE IITK

- Analyzed performance of ML models like ANN, CNN, CRNN and RNN for multiclass audio classification and multilabel audio classification
- Refined models with preprocessing techniques like DeciBel conversion and obtained peak F1 score of 0.7385 with CNN

## EDUCATION

**IIT KANPUR**

BTECH IN ELECTRICAL  
ENGINEERING

2020-2024

Cum. GPA: 8.02 / 10.0

**XII MPBSE**

2020 | Seoni

Percentage: 88.8%

**X CBSE**

2018 | Seoni

Percentage: 94.2%

## ACHIEVEMENTS

All India Rank 3070, JEE Advanced  
2020 among 250K candidates

Secured 99.35%ile in JEE Mains  
2020 among over 1.1Mn candidates

Achieved Maximum Rating of 1809  
in Codechef

Cleared Samsung's Software  
Competency Advanced Test (SWC)

Received Pre-Placement Offer from  
Samsung Research Institute for  
delivering good results during  
Internship

## COURSEWORK

Data Structures and Algorithm

Intro to Machine Learning

Computer Graphics

Big Data and Visual Analytics

Image Processing

Machine Learning in Signal

Processing

Linear Algebra

Probability and Statistics

## EXTRA-CURRICULAR

**MANAGER,**

**INTER IIT TECH MEET 11.0**

Jun'22-Feb'23

Coordinated with the team to  
organize 15+ events with over 200+  
participants in a 3-day Tech-meet  
held at IIT Kanpur

Connected with multiple  
organizations for sponsorship and  
problem statements