SHRAVAN JINDAL

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EDUCATION

Degree	${\bf Institute/Board}$	Grades	Year
Bachelor of Technology	Indian Institute of Technology, Ropar	7.00 (Till 5th sem)	2022-2026
Senior Secondary	Central Board of Secondary Education	97.2%	2022
Secondary	Central Board of Secondary Education	92.8%	2020

TECHNICAL SKILLS

- Programming Languages: C/C++, Python, JavaScript, Typescript, Java, Dart.
- Development: Flutter, NextJs, ReactJS, ExpressJS, MongoDB, postgres, git, github, linux, LangChain, Hugging Face.
- ML: PyTorch, Scikit Learn, Tensorflow, LLMs, NLP, OpenCV, MNE, numpy, pandas, matplotlib, seaborn.

I have a solid grasp of web development using Node.js and a strong understanding of fundamental software concepts. My internships reflect my growth in the field of machine learning, where I've gained practical experience and applied knowledge. Recently, I've also been actively exploring DevOps. I've developed a good understanding of key concepts such as Docker (which I've explored in depth), CI/CD pipelines, Kubernetes, basic AWS services, software testing, metrics, scalability. As a fast and enthusiastic learner, I am constantly expanding my skill set and diving deeper into new technologies.

WHAT I AM CURRENTLY WORKING ON?

I am currently delving deep into software development, exploring both high-level architectural design and low-level software design principles. To strengthen my understanding, I am actively working with Java. Alongside this, I am also engaged in research. For my B.Tech project under Dr. Mudasir Ganie, I am working on Random Vector Functional Link (RVFL) based architectures for time series forecasting. Additionally, I am collaborating with Dr. Shweta Jain on a research paper in theoretical computer science, focusing on algorithms for fair scheduling of resources on interval graphs. Through these efforts, I aim to grow both as a software developer with a strong grasp of system architecture and as a researcher exploring diverse domains within computer science.

EXPERIENCE

• XYROMATICS Automation Solution Pvt. ltd.

July 2024 - September 2024 On-site || **Github**

Machine Learning Lead

- no looming
- Contributing to a startup focused on predictive maintenance for machines, specializing in machine learning.
- Working extensively with raw time series data from accelerometers and analyzing vibrations in time and frequency domain.
- Developing classification algorithms to predict different types of faults and their severity stages for early warning.
- I also worked with AWS lambda functions, dynamoDB, and event based triggers.

• IKSMHA | IIT Mandi

May 2024 - July 2024

Research Intern

On-site || Github || LOR

- Expanded my knowledge of Python libraries for EEG data processing like MNE, gaining valuable insights.
- I enhanced my expertise in time-frequency analysis. Using ITPC, ISPC to analysis phase connectivity among electrodes.
- Using different tools like Topological Data Analysis to understand intrinsic features of dataset like shape and connectivity.
- Gained hands-on experience working with EEG signals from the human brain and performed various types of analyses to extract meaningful insights.
- Diving deep into the underlying concepts helped me understand how to interpret signals and uncover hidden patterns within the data.

PROJECTS

• LearnEra
NextJS | MongoDB | Hugging Face

2025

Website || Github

- Enable users from different to achieve personalized skill growth through AI-driven task generation and evaluations.
- Increased learning efficiency by 40% through an adaptive system that evaluates progress and customizes tasks.
- Automated skill assessments, reducing manual effort by 60% and enhancing user engagement with AI-driven insights.
- I am passionate about launching this product as a startup, recognizing the growing opportunities in AI-driven learning.
- With this technology, personalized learning paths can be created based on an individual's skills and level of understanding.
- To support this project, I developed an extensive dashboard that clearly visualizes a user's progress across various skill areas.

WanderLust

2024

 $NodeJS \mid EJS \mid ExpressJS \mid MongoDB$

Website || Github

- Built a location-based peer-to-peer marketplace in MVC Architecture, integrating frontend and backend seamlessly
- Created a responsive, intuitive UI for seamless navigation across devices, using EJS & CSS, ensuring modern user experience.
- Integrated secure authentication, session management, and real-time updates for dynamic interaction.
- I made this project understand web development in depth. Understanding how to structure the codebase and also write good code.

• FestEz
Flutter | Firebase

2025

- Revolutionized fest experience, enabling real-time event tracking, instant updates, and hassle-free registrations.
- Enhanced user engagement with live participation insights, helping attendees discover and join top events effortlessly.
- Potiential to deliver 10,000+ sponsor impressions per fest, maximizing brand visibility through strategic in-app placements.
- This was a group project, which taught me valuable lessons in collaboration—how ideas evolve through discussion, the importance of constructive debate, and the focus on optimizing solutions.

• ClinicX

 $NextJS \ / \ FastAPI \ / \ LangChain$

Github

- Built an AI doctor assistant chatbot with NextJS and FastAPI, using LangChain for intelligent conversations.
- Supports patient image uploads and maintains memory for personalized and context-aware interactions.

• Tradehub

2024

ReactJS | NodeJS | ExpressJS | MongoDB

Website || Github

- Developed a responsive web app using ReactJS, enabling users to explore products, pricing, and other details seamlessly.
- I made this project to test my ReactJS skills.

• COW Implementation in xv6

2024 Github

C | Operating Systems

- Implemented Copy-On-Write fork in xv6 to optimize memory consumption by sharing pages between processes.
- Developed a robust page fault handler to allocate new pages upon write attempts, ensuring data integrity and efficiency.
- Gained proficiency in advanced OS concepts, including page fault management, synchronization, and deadlock prevention.

• SpellCheckerAndAutoCorrection

2023

C++ | Data Structures & Algorithms

Github

- Implemented efficient spell checker using trie, bloom filter, and LRU cache for quick word lookups and suggestions.
- Applied multithreaded design using pthreads for potential parallel processing, enhancing scalability and performance.

• Travelling Salesman: Computer Vision

2024

Deep Learning | Feature Engineering

Github

- Developed a computer vision system to calculate the distance traveled by a Traveling Salesman
- Preprocessed data by extracting image dimensions and city count, and resized images with padding.
- CNNs to predict the total path length. Achieved an r2 score of 0.94, demonstrating high accuracy in distance prediction.

• cucu-compiler

2024

 $lex \mid yacc \mid compilers \mid Programming \ Paradigms \ and \ Pragmatics$

Github

- Cucu-Compiler is a basic toy compiler for a small subset of the C language, built using Lex and Yacc.

• Other Projects

_	Champsim Simulator: Introduced new microarchitectural features, enhancing the hit-rate by 0.01.	$2024 \mid\mid$ Github
_	Risc-V Assembler: Designed and applied a high-performance RISC-V assembler in C++.	$2024 \mid\mid$ Github
_	Data Dazzle: Comprehensive analysis of (80) house features to understand their influence on prices.	$2023 \mid\mid$ Github
_	Hexapod: Engineered a biomimetic robot to emulate insect movements, expertise in servo motor control.	$2023 \mid\mid$ Github
_	Hand Gesture Simulator: Developed a hand gesture simulator using MPU6050, flex sensors, and ESP32	$2023 \mid\mid$ Github

ACHIEVEMENTS

• Codeforces Rating - Pupil Rated - 1200+	2025
• General Championship Hackathon - Got 2nd position in Web-Development Hackathon.	2024
• Exhibition Representative - Represented Robotics Club in Metrix 5.0.	2023
• JEE Advanced - AIR - 1796	2022

KEY COURSES TAKEN

- Computer science fundamentals: Program Paradigms and Pragmatics, Operating Systems, Database management systems, Computer Networks, Data Structures & Algorithms, Analysis of Advanced Algorithms, Advance Data structures & Algorithms (PhD course), Theory of Computation, Computer Architecture, Software Engineering.
- Machine Learning: Advanced Learning Algorithms, Supervised Machine Learning, Stanford CS229, Machine learning A-Z.
- Mathematics: Probability and Stochastic, Differential Equations, Linear Algebra, Advanced Calculus.

Positions of Responsibility

• Sponsorship Head - Zeitgeitst, IIT Ropar - Managed the team and got 12.57 lakhs of sponsorship	
• Mentor - Robotics Club, IIT Ropar - Mentored over 100+ students.	
• Technical Coordinator - Robotics Club, IIT Ropar - Overseeing various club activities and made various projects.	2023
• Associate - DCypher Club, IIT Ropar - Directed various club activities.	2023