MUNJAM NAVADEEP

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EDUCATION

Indian Institute of Technology, Bhilai **2022 – Present**
B.Tech - Computer Science and Engineering *Bhilai, Chattisgarh*

PROJECTS

Full Stack Blog Platform | React, NextJS, Database - Postgress **Jan 2025 - Feb 2025**

- Structured a relational database schema with PostgreSQL and Prisma ORM, modeling 5+ user relationships and storing 1,000+ posts efficiently.
- Implemented secure authentication using Clerk, supporting 2 OAuth providers and email/password authentication, ensuring 100% security compliance.
- Built 4 CRUD operations (Create, Read, Update, Delete) for blog posts, implementing role-based authorization checks with 99.9% accuracy
- Deployed on Vercel with CI/CD automation, reducing manual deployment time by 70%.
- **Technologies Used:** Next.js 14, TypeScript, Tailwind CSS, Prisma, PostgreSQL, Clerk, Vercel ,CI/CD for automation .

Terminal Shell Development | C, Unix System Programming, Make **June 2024 - July 2024**

- Developed a **custom Linux shell** with core command execution capabilities using `fork/exec` system calls.
- Engineered **15+ standard commands** including `ls`, `cp`, `mv` with proper error handling and user feedback.
- Added **custom features** like `gexit` for graceful exit and command history tracking.
- Optimized performance through **memory management** and modular code design with `.h/.c` files.
- Refactored code into modular `.h/.c` files, reducing compile time by 20% and improving code maintainability, enabling faster debugging and feature implementation across the command suite.
- Configured **build automation** using Makefile with compilation flags and clean targets.

Mini GO Compiler | C, Flex, Bison, Compiler Design **Dec 2023 - April 2024**

- Developed a **compiler** for a subset of GO language with **syntax analysis** and **semantic checking** capabilities, processing 500+ LOC/sec.
- Optimized grammar rules using **LR(1) conflict resolution**, reducing parsing failures to 5% and improving parse times by 90%.
- Implemented **symbol table management** with O(1) lookup for global/local variables and operator overloading resolution.
- Enabled **function recursion** support with visual parse tree and **AST generation**, reducing debugging time by 30%.
- Designed robust **error recovery** system detecting 95% of syntax/semantic issues with 5% false positives.
- Leveraged **Flex** (lexical) and **Bison** (syntax) to automate 95% of tokenization/parsing.

TECHNICAL SKILLS

Languages: C, C++, JavaScript, TypeScript
Markup/Styling: HTML, CSS, Tailwind CSS
Technologies/Frameworks: Next.js, React, Express
Developer Tools / DevOps: Git, GitHub, VS Code, Postman, Jenkins, Docker, Kubernetes,Trivy, SonarQube
Cloud/Databases: AWS, MongoDB, Mongoose
Coursework: Web Development, Data Structures and Algorithms, Operating Systems, Compiler Design, Machine Learning, NLP
Areas of Interest: DevOps, Web Development

ACHIVEMENTS

1st place **Code Cursade Hackathon** among 24 teams organized by the Coding Club at IIT Bhilai.2024

EXTRACURRICULAR

- **3KM Marathon Champion**: Won 3rd place out of 18 in 2021 Intra-College Competition (Timing: 10:47)
- **DesignX Member** (2023-2024): Designed 3+ institutional event posters using Figma and Adobe Suite with 60+ impressions