

# Neerad Ahire

7720008450 | [neeradahire2004@gmail.com](mailto:neeradahire2004@gmail.com) | [linkedin.com/in/neerad-ahire-9212a2292](https://linkedin.com/in/neerad-ahire-9212a2292) | [leetcode.com/u/Neerad\\_ahire](https://leetcode.com/u/Neerad_ahire)

## EDUCATION

**Pune Vidyarthi Griha's College of Engineering and Technology (PVG COET)** Pune, Maharashtra  
*B.E. in Electronics and Telecommunication — GPA: 8.76/10* *Nov 2022 – Present*

## EXPERIENCE

**Cadence Design Systems** Pune  
*SWE Intern* *Jan. 2025 – Mar 2025*

- Developed **pseudocode** for **PCIe Link Training and Status Machine (LTSM)** reducing driver development time by 20%.
- Built logic for **core LTSM states** (initialization, retraining, recovery) per PCIe standards.
- Wrote a **transition guide** for firmware developers, minimizing logic errors by 25%.

## PROJECTS

### Car Price Prediction API

*Tech:* Python, FastAPI, scikit-learn, Docker, Redis

- Developed a **machine learning-powered API** using FastAPI to predict car resale prices based on dynamic vehicle attributes.
- Built a complete **ETL and model training pipeline** with data preprocessing, feature encoding, and Random Forest regression.
- Integrated **Redis caching** for faster inference and containerized the service with **Docker** for seamless deployment.
- Implemented environment-based configuration using **.env** variables and deployed the API on Render Cloud.

### Custom Unix Shell

*Tech:* C++, POSIX API, GNU Readline

- Developed a fully functional **POSIX-compliant shell** in C++ supporting **20+ built-in commands**, I/O redirection, **pipelining**, and command execution using `fork()`, `execvp()`, and `dup2()`.
- Implemented an advanced **tokenizer and parser** capable of handling nested quotes, escape sequences, and command substitution for accurate command interpretation.
- Integrated support for **stdout/stderr redirection** (`>`, `>>`, `2>`), and pipeline chaining across multiple processes using UNIX file descriptors.
- Ensured **memory safety** and stability through proper resource deallocation and error handling for all system calls.
- Added persistent **command history management** and **auto-completion** using GNU Readline to enhance interactivity and usability.

## ACHIEVEMENTS

- **Semifinalist, ACES Hackathon** among top student teams.
- Solved **500+** DSA problems across **LeetCode/CodeChef**.
- **Campus Ambassador, KPIT**: Organized hackathon awareness campaigns.
- **1571** rating on Leetcode and 2 star on codechef.

## SKILLS

- **Programming & Embedded:** C++, Python, Embedded C, Arduino UNO, ARM Cortex (LPC2148)
- **Systems & Tools:** Linux (POSIX), Git, Docker, FastAPI, Redis, TensorFlow, Keras, NumPy, Pandas, VS Code