

# Pavan Kumar

Software Developer

+91 6379748362 | [pavankumarv.dev@gmail.com](mailto:pavankumarv.dev@gmail.com) | [pavank-v.github.io/portfolio](https://pavank-v.github.io/portfolio)

## SUMMARY

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Software Developer skilled in Python, TypeScript, and Rust, focused on system design and performance optimization.

## EXPERIENCE

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### Software Developer Intern, CypherSage

Jan 2025 - Apr 2025

- Independently rebuilt the entire front-end for a client, optimizing for *SEO* and performance.
- Developed a server-rendered web application using *Node.js* and *Express*.
- Designed a responsive and lightweight UI with clean, maintainable code.
- Prioritized speed and search engine visibility over JavaScript-heavy frameworks.

## PROJECTS

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### Audio Copy-Move Forgery Detection, [Link](#)

- Developed a deep learning model to detect forged audio by identifying repeated sections within the same file.
- Transformed audio into spectrograms, extracted keypoints, and applied spiral pattern extraction to construct graph-based representations that preserve spatial and temporal features.
- Trained a CNN model on structured graph embeddings, enabling precise detection of manipulated audio by distinguishing forged segments from original content.

### Fitness Application, [Link](#)

- Built out of a personal passion for fitness, creating a platform that fits my own needs where existing solutions fell short.
- Designed a scalable and intuitive backend to track workouts, nutrition, and progress dynamically.
- Focused on a seamless and personalized experience, with front-end development planned for the next phase.

### Custom Interpreter in Golang, [Link](#)

- Built a custom interpreter from scratch in Go to parse and execute a simple scripting language.
- Designed a lexer, parser, and evaluator supporting variables, functions, and control flow.
- Implemented tokenization, AST generation, and recursive evaluation for runtime execution.
- Focused on performance, modular design, and extensibility for future language features.

## SKILLS

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|-------------------|--|
| Programming       | : Python, TypeScript, Rust, Go, C, SQL           |
| Web Development   | : Django, Flask, Next.js, ReactJS, Node, Express |
| Tools I Use       | : Kitty, Git, Tmux, Vscode, Gimp, Ubuntu         |
| Data Analytics/ML | : NumPy, Matplotlib, Pandas, Seaborn             |

## AWARDS

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### Hackathon on Generative AI-RAG Framework for Info Retrieval

- Awarded 2nd Place for developing a Course Assistant chatbot using Flowise, leveraging NLP and conversational AI to provide personalized domain recommendations and enhance user engagement.

## EDUCATION

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Annai Mira College of Engineering and Technology, Vellore - BE, CS - GPA: 8.54

Oct 2021 - Present

National Higher Secondary School - HSC, - GPA: 8.65

National Higher Secondary School - SSLC, - GPA: 8.3