

# Ramratan Padhy

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## EDUCATION

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### SRM University AP

*Bachelor of Technology in Computer Science Engineering*

- Year 1 | SGPA: 9.0/10.0

Amaravati, Andhra Pradesh

2025 – Present

## EXPERIENCE

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### Next Tech Lab AP

*Associate*

- Research associate at a QS ReImagine awarded student society.
- Collaborating with a research collective to explore low-level implementations of emerging technologies.
- Contributing to peer-to-peer technical workshops on systems programming and AI architecture.

Amaravati, Andhra Pradesh

Oct 2025 – Present

### Notecove (Stealth Startup)

*Technical Content Writer*

- Authored 30+ comprehensive technical articles and guides on emerging software trends and AI ethics.
- Synthesized complex engineering concepts into accessible documentation for a specialized audience.
- Collaborated with the founding team to define the technical voice and content strategy for the platform.

Remote

May 2025 – Aug 2025

### Hush (Startup)

*ML Intern*

- Worked with image models to discern user profiles to keep the app authenticity.
- Collaborated with the founding team to define and enhance user experience.

Remote

March 2026 – Present

## PROJECTS

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### AI Advertisement Tool (RAG Pipeline) | *Python, RAG, ETL*

Completed

- Developed an end-to-end content engine using a Retrieval-Augmented Generation (RAG) framework to synthesize data from LinkedIn, GitHub, and web portfolios.
- Architected an ETL pipeline to clean unstructured web data for LLM-based script generation and automated video/audio synthesis.

### High-Performance Editorial Portfolio | *HTML, CSS, Web Optimization*

Completed

- Architected a zero-dependency, single-file portfolio site optimized for instant edge delivery, achieving sub-300ms load times and a perfect 100/100 Lighthouse performance score.
- Engineered a completely static, JavaScript-free architecture that inherently eliminates third-party vulnerabilities, maximizing security while ensuring optimal crawlability for modern AEO and SEO bots.

### Temporal RAG pipeline | *Python, RAG, ETL*

Completed

- Developed an end-to-end pipeline where you can input a video, and make any query regarding it.
- Worked with advanced data structures and various audio-video technologies to produce a system capable of answers queries about a video based on timeline and not only semantical similarity.

### AXtheR (Windows) | *C, Windows API, Wintun, Cryptography*

Completed

- Developed a high-performance, zero-dependency, easy to run UDP VPN for Windows by integrating the Wintun kernel driver and Winsock2.
- Engineered a zero-heap allocation data path with multi-threaded asynchronous I/O and dynamic Windows routing table manipulation.
- Implemented a self-contained, RFC-compliant ChaCha20-Poly1305 cryptographic engine from scratch in C with constant-time MAC verification.

### BattleAttorney | *Python, Godot, Networking*

Completed

- Shipped a playable AI debate game (Ace Attorney-style) where an LLM opponent argues back and a separate judge LLM scores logical soundness. Built on Godot, Python, and Groq with a RAG layer for character personality.

### Independent Research on BitNet-1.58b | *Python, Machine Learning, Mathematics*

Ongoing

- Conducting novel research and experimentation on BitNet-1.58b by altering its context length.

### Independent Research on SWA-based LLMs | *Python, Machine Learning, Mathematics*

Ongoing

- Conducting novel research and experimentation on Qwen 2.5 family by attempting to quantize it using BitNet's ternary engine.

## TECHNICAL SKILLS

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**Languages:** Python, C, LaTeX,

**Developer Tools:** Git, VS Code, Postman, APIs, Vector Databases

**Core Concepts:** Data Structures, Transformer Architectures, RAG, Technical Documentation, Mechanistic Interpretability

**Soft Skills:** Technical Communication, Research Synthesis, Problem Solving, Teamwork