

# KARTAVYA SINGH

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## EDUCATION

### University of Cincinnati, Cincinnati, OH

Bachelor of Science in Computer Science

Cumulative GPA: 3.73 /4.00

Expected Graduation: May 2026

**Relevant Coursework:** DB Theory, Cloud Computing, Theory of Automata, Adv. Data Structures, Software Testing & Quality Assurance

**Awards and Honors:** University Honors Program | Future of Data Hackathon “Best Finance Software” and MakeUC Hackathon “Best

Use of AI” Prize; Named in UC’s dean list for Fall’21-23, Spring’22-24 for academic excellence; Certified for learning foundational AI

**Leadership Involvement:** Bearcat Tech Innovators (VP & Tech Track Chair) | UC Learning Commons (SRS Leader & MASS Tutor)

## WORK EXPERIENCE AND INTERNSHIP

### Possip | Data Engineering Intern | Nashville, TN (Remote)

May 2025 – Aug 2025

- Built and optimized full-stack features in Ruby on Rails, TypeScript, React, Tailwind CSS, PostgreSQL, Redis, Embedded Ruby and Sidekiq, scaling applications and building secure, production-grade SaaS systems used by organizations and groups nationwide
- Delivered impactful updates — including Adaptive PDF Export System, WYSIWYG editor enhancements, global toast notifications, and a full survey-builder revamp — streamlining administrator workflows by 35% and improving platform usability at scale
- Applied test-driven development with RSpec & Jest to deliver reliable, maintainable features and strengthen long-term system stability
- Honed problem-solving, system design, and communication in cross-functional teams within a high-impact, fast-paced environment

### Live Well Collaborative | Computer Science Co-op | Cincinnati, OH

Jan 2025 – May 2025

Projects: Council on Aging (Blue Ash, OH) | Procter & Gamble (Cincinnati, OH)

- Spearheaded development of a seamless dynamic multi-modal data stream LLM chatbot as a full-stack application featuring a research repository spanning over 5 years of projects — ultimately boosting team productivity & streamlining onboarding for future peers
- Leveraged Flask backend integrating 65+ APIs for user authentication and sponsor-project LLM junction, React and Tailwind CSS for a fluid user experience, and AWS Relation Database Service (RDS) PostgreSQL for secure user, sponsor, and project data storage
- Co-Created Interactive AI Personas for P&G, deepening my prompt engineering expertise and contributing to innovative research while thriving in a collaborative team environment. Assisting P&G with its secondary research and future onboarding
- Ideated key automation opportunities using Power Automate and Microsoft Dynamics Processes by conducting comprehensive workflow analysis, implementing process optimizations to effectively streamline COA’s workflow

### iCDCU Lab | Python/Flask App Developer | Cincinnati, OH

May 2023 – Aug 2023

- Led the development of dynamic webpages for ResDash Project using HTML, CSS, Python, and JavaScript, resulting in successful launch of the first website ensuring an enhanced user experience for over 700 University of Cincinnati Resident Doctors
- Streamlined codebase by eliminating redundant segments and implementing reusable components across the entire project
- Integrated D3, Flask, Django, Flask Breadcrumbs, and Bootstrap, streamlining the efficiency of the optimized application by 45%

## PROJECTS

### PersonaForge: MakeUC Hackathon (2025) | Best Use of AI Using ElevenLabs

Oct 2025 – Nov 2025

- Spearheaded a Windows desktop voice assistant built with Electron, React/TypeScript (Vite), Node.js, Electron IPC + preload, Web Audio (AudioWorklet), esbuild, dotenv; integrated ElevenLabs (STT/TTS), Gemini/OpenAI, CSP hardening, and tray/icon setup
- Designed a 4-stage real-time loop (AudioWorklet → ElevenLabs STT → Gemini LLM planner → Executor → ElevenLabs TTS)
- Architected an executor framework for 8 core OS actions (OpenApp, Type, Click, Shortcut, SystemSetting, Message, Confirm, Wait) with a JSON plan schema + validation, secure IPC guardrails, action-level audit logs for traceability, and 20+ voice templates

### FinVest: Future of Data Hackathon (2024) | Best Finance Software (Fintech)

Aug 2024 – Sept 2024

- Spearheaded "FinVest", VR financial platform using Unity, C#, and .NET for financial planning and equity portfolio education
- Integrated Alpha Vantage API to track real-time data for over 15,000 stocks, Plaid.NET API connecting 3,000+ financial institutions, and SQL for secure user authentication with IndexedDB for robust transaction management and data safety
- Visualized 10+ unique 3D Charts and Graphs using Chart.js and Plotly, enhancing user interaction with dynamic financial insights

## SKILLS

### Computer Languages/Frameworks/Libraries/OS, Verbal, And Critical Thinking

- **Proficient:** JavaScript, TypeScript, Python, Ruby on Rails, Go, C++, C, C#, React, MongoDB, Express, Node.js, Flask, Git, Java, REST & GraphQL API design, Redis, TensorFlow, Electron, Vite, AWS Relational Database Service (RDS) PostgreSQL, NoSQL, DynamoDB, OAuth2, Tailwind CSS, Framer Motion, GSAP, React Spring, D3.js, Docker, ASP.NET, RSpec, Jest, JUnit, Spring Boot, Power BI, Data Structures Algorithms, Discord.js/.py, PyTorch, NLP, Reinforcement Learning, English, Hindi
- **Intermediate:** Rust, CUDA, LangChain, Unity, Assembly, Figma, Selenium, Kubernetes, Azure, OpenCV, GitLab, Next.js, PySpark, Google Cloud, Deep Learning Architectures, LabVIEW, NumPy, Pandas, Matplotlib, Kali Systems, Tableau, Django, Japanese
- **Exploratory:** Continual Learning, AutoML, Vanilla-JS, Jenkins, Swift, XML, Hive, VR/AR, French, Arabic

Available for full-time starting May 2026 | Entry level Full-Stack/Backend Software Eng — AI/Data Eng roles