

# Atharva Negi

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## EDUCATION

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### Emory University

Master of Science (MS), Computer Science

- Relevant Coursework: Software Engineering, Machine Learning, Natural Language Processing, Information Retrieval, Database Systems

May 2026

GPA: 4.0

### Devi Ahilya University

Bachelor's, Computer Engineering

May 2023

GPA: 3.5

## EXPERIENCE

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### Emory University

Software Engineer

Atlanta, GA, USA

February 2025 - Present

- Reduced manual review cycles by 45% by architecting and deploying a production full-stack evaluation platform using React, FastAPI, Flask, AWS RDS, and S3 supporting 2000+ evaluation runs across 4 research initiatives.
- Increased deployment frequency and reduced operational overhead by 50% by designing modular backend services and implementing 25+ RESTful APIs with Docker based CI/CD pipelines using Azure DevOps and GitHub Actions.
- Reduced deployment time by 70% by migrating a production Ruby on Rails application to a containerized AWS ECS architecture with ECR image pipelines and automated releases across development, staging, and production environments.
- Designed and deployed a full-stack academic planning SaaS platform using React, TypeScript, Flask, and PostgreSQL serving more than 200 active users and processing over 10000 academic records with high system availability.
- Engineered a rule-based validation engine for prerequisite and graduation checks across 5 academic tracks and implemented Redis caching to reduce database load and improve application response time during peak usage.

### Cognizant

Software Engineer

Pune, MH, India

September 2023 - July 2024

- Debugged and resolved 20+ production defects on a Drupal 8 platform by analyzing application logs and MySQL queries, reducing recurring issues and improving system stability across multiple releases.
- Optimized MySQL database performance using composite indexing, query restructuring, and caching strategies, improving response time by 35% under peak traffic conditions.
- Increased backend service throughput by 30 percent by optimizing Java Spring Boot APIs and refactoring service layer logic to support higher concurrent traffic loads.

### Cognizant

Software Engineer Intern

Pune, MH, India

January 2023 - June 2023

- Developed 20+ reusable React components across admin and user interfaces, improving UI consistency and reducing front-end development time for new features.
- Collaborated with backend engineers to optimize REST APIs and SQL queries, improving request response times by up to 25% under concurrent load.

## PROJECTS

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### CoRAGen - A Comparative User Interface for Multi-Aspect Retrieval Augmented Generation - [Link to project](#)

- Built a full-stack comparative RAG interface using React and Flask that enables users to analyze controversial queries across multiple stances, integrating GPT-4, Claude, and HuggingFace models with Google, Bing, and PyTerrier retrieval engines.
- Designed an LLM-judge evaluation pipeline measuring context relevance, faithfulness, and cross-aspect relatedness, validated through a user study where 80% of participants demonstrated reduced stance polarization on controversial queries.

### ReSource — Resource Sharing Platform - [Link to project](#)

- Spearheaded development of a full-stack resource-sharing platform across a team of 6, personally owning the React.js frontend with JWT authentication, real-time chat via Socket.IO, and an interactive Leaflet map for location-based food listings.
- Architected a modular Flask backend with SQLAlchemy and SQLite, designing 20+ RESTful APIs for authentication, listings, and messaging while refactoring service layers to eliminate duplicated business logic across modules.

### RAG-BioQA: Retrieval-Augmented Generation for Long-Form Biomedical Question Answering - [Link to project](#)

- Developed a Retrieval-Augmented Generation (RAG) pipeline using BioBERT embeddings, FAISS search, and a fine-tuned FLAN-T5 model, resulting in a 17% increase in BLEU-1 and 11% increase in ROUGE-1 scores over baseline models on the PubMedQA dataset.
- Implemented and evaluated 3 re-ranking strategies (BM25, ColBERT, MonoT5) on 181K+ biomedical QA pairs, improving semantic retrieval accuracy and demonstrating 5.2% gain in ROUGE-1 by optimizing initial retrieval parameters.

## SKILLS

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**Programming Languages:** Python, Java, C++, JavaScript, SQL, TypeScript

**Frameworks & Libraries:** React, Flask, Node.js, Drupal, Spring Boot, FastAPI, Redux

**Databases:** MySQL, MongoDB, PostgreSQL

**Cloud & DevOps:** AWS (ECS, ECR, RDS, S3), Docker, Git, Google Cloud Platform, Azure DevOps

**AI / ML / LLM Systems:** Retrieval-Augmented Generation (RAG), LLM evaluation, HuggingFace Transformers, LLM-as-judge, Prompt Engineering, Keras, TensorFlow, NumPy, Pandas