

SHALINI AGARWAL

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Over 5 years of experience building scalable systems - from data pipelines and APIs to conversational AI.

Technical Skills

Languages: Python, HTML, CSS, JavaScript, PostgreSQL, Java, C++

Tools & Technologies: Jupyter, Amazon Web Services (AWS), OCR, Power BI, Linux, Docker, Unit Testing

Libraries & Frameworks: NumPy, Pandas, NLTK, Matplotlib, Flask, CI/CD, Spring Boot, Agile, Rasa

Work Experience

The Research Foundation of SUNY

July'24 - February'26

Research Software Engineer | GCP, SDLC, FastAPI, GenAI, Python, WebSocket

New York, USA

- Designed & implemented backend services for a real-time conversational system, orchestrating streaming speech-to-text, LLM-based response generation, & WebSocket delivery across 20 conversation turns per session
- Reduced LLM response latency by 50% with prompt engineering, lightweight RAG strategies, & backend flow optimizations
- Built a queue-backed discourse memory pipeline to handle overlapping partner utterances, preventing LLM input buffer overflows while preserving conversational context across turns
- Enhanced system reliability by detecting & handling 8+ distinct runtime failure modes, enforcing schema validation, implementing retries with exponential backoff, structured exception handling, & custom timeouts
- Expanded observability using Prometheus & Grafana, increasing logging & metrics coverage by capturing complete conversation history, & end-to-end latency for debugging & performance analysis
- Identified & resolved monitoring-induced metric inflation, excluding internal endpoints from request instrumentation to prevent scrape feedback loops, minimizing metric noise by 30% & improving accuracy of dashboards & alerts

Wipro Ltd.

July'19 - Aug'22

Senior Software Engineer | Python, Power BI, AWS, MySQL, Pandas, NumPy, NLTK, OpenCV

Telangana, India

- Spearheaded production-grade healthcare applications, including multi-screen BI dashboards, automated ICD-10AM coding, & optimized EHR indexing tools to improve data accessibility & workflow efficiency
- Engineered scalable data pipelines using APIs, OCR (Tesseract), NLP, and fuzzy matching to process 5,900+ records, 2,000+ EHRs, and 100,000 files with reliable performance and 80% diagnostic accuracy
- Deployed Alexa Skill Kit-based voice assistants, translating domain requirements into maintainable, user-facing software through close collaboration with cross-functional stakeholders

Yahoo Inc.

June'23 - Aug'23

Software Engineer Intern | Docker, Python, PyCharm, Postman, Git, CI/CD, Unit Testing, Pytest

New York, USA

- Developed an article display time feature across all Yahoo properties, enhancing SEO and enriching internal CMS editorial capabilities
- Utilized Docker, Screwdriver CI/CD & unit testing with Pytest to deploy the feature ensuring reliable testing, deployment, and maintainability

The Research Foundation of SUNY

May'23 - Dec'23

Research Assistant | Rasa, NLU, Hugging Face, AWS, Linux

New York, USA

- Architected an NLP-based conversational AI chatbot for an NSF-funded project combating disinformation among senior citizens, using Rasa and AWS EC2 & S3 services
- Integrated LLM from Hugging Face into Rasa to enable neural response generation, advancing research in NLP & conversational AI for social good

State University of New York at Buffalo

Jan'23 - Dec'23

Teaching Assistant | Apache Solr, GCP, Flask, Web Scraping, Excel

New York, USA

- Mentored two graduate classes of 65+ & 80+ students for courses Information Retrieval and NLP & Text Mining resp.
- Guided students on projects, supervised grading activities, and facilitated in course management & organization

Leadership / Extracurricular

- UB CSE Scholarship Recipient, Grace Hopper Celebration, 2023, Academic In-person Sponsor, July'23
- Member of Senate, GradSWE, UB SUNY, Part of SWE organisation representing diversity in technology, Jan'23
- Merit Scholarship Holder, TIET, Featured in top 10% of the department for exemplary performance, Jun'16 - Jun'18
- Volunteer (Teacher & Content Writer), Har Hath Kalam, India Association during Aug'16 - Apr'17

Education

State University of New York at Buffalo

Aug'22 - Dec'23

Master of Science, Computer Science and Engineering; GPA: 3.7/4.0

New York, USA

Thapar Institute of Engineering and Technology

June'15 - June'19

Bachelor of Technology, Electronics (Instrumentation and Control) Engineering; GPA: 3.8/4.0

Punjab, India