Yash Ananta Zode

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PROJECT EXPERIENCE

AI-Powered Knowledge Base with Dynamic Answer Generation
Technologies: Hugging Face Transformers, FAISS, Elasticsearch, Python, Flask, Docker
- Developed an AI-driven question-answering system for automated customer support using Retrieval-Augmented Generation (RAG), combining document retrieval and natural language generation to provide accurate and dynamic responses.
- Implemented FAISS for efficient document retrieval by encoding documents and queries into vector embeddings and performing similarity searches to retrieve contextually relevant documents.
- Used T5 (Text-to-Text Transfer Transformer) to generate context-aware answers by converting the question and retrieved context into a text format for fluent, human-readable responses.
- Deployed with Flask, providing a REST API for seamless interaction, enabling real-time query processing and automating customer support tasks.
- **Github**: https://github.com/YashZode/AI-Powered-Knowledge-Base-with-Dynamic-Answer-Generation

Machine Learning-based Automated Admission Recommendation System
Technologies: Python, Scikit-learn, PyMuPDF, Tesseract OCR, Hugging Face Transformers, Flask
- Developed a Flask-based web application that predicts graduate admission chances by extracting and analyzing scanned SOP and LOR PDFs using OCR and NLP techniques.
- Engineered a complete ML pipeline integrating document summarization, keyword extraction, and sentiment analysis using Hugging Face Transformers.
- Trained and evaluated a Linear Regression model on the Kaggle "Graduate Admissions" dataset, achieving an MAE of 0.05 and R^2 of 0.82, outperforming a residual neural network baseline.
- Implemented keyword-based scoring and flag extraction (e.g., research, internships) to transform qualitative content into structured numerical features.
- Deployed an end-to-end system with document upload, real-time prediction, and structured output summaries through a responsive web interface.
- **Github**: https://github.com/YashZode/Machine-Learning-based-Automated-Admission-Recommendation-System

CloudEduTrack: Accessible Online Quiz Platform
Technologies: Angular, JavaScript, Spring Boot, AWS, Azure, Docker, Kubernetes
- Led the design and development of a voice-activated quiz platform using Angular, JavaScript and Spring Boot, significantly improving accessibility (95%) for visually and motor-impaired users.
- Increased user engagement by 40% by implementing adaptive UI themes and advanced speech recognition using JavaScript-based APIs
- Managed platform scalability and reliability by deploying services on AWS and Azure using Docker and Kubernetes.
- **Link**: https://www.uwm-cloudblog.net/general/cloudedutrack-an-integrated-cloud-based-quiz-examination-system/

IOT Web platform for Plant Control and Monitor
Technologies: Java Spring Boot, REST APIs, MongoDB, PostgreSQL
- Improved manufacturing efficiency by 40% through development of microservices-based MES platform with real-time monitoring using Java Spring Boot and REST APIs.
- Enhanced data storage efficiency by 25% through MongoDB and PostgreSQL integration.
- Facilitated seamless system integration by directly collaborating with customers, resolving 90% of issues during deployment

PROFESSIONAL EXPERIENCE

Research Intern (Software Engineer), *University of Wisconsin-Milwaukee*   *Aug 2024 – Present*
- Developed and deployed a full-stack AI solution to automate the extraction, summarization, and evaluation of graduate application documents, improving the admissions process for faculty users.
- Led the integration of OCR (Tesseract) and NLP (LaMini-Flan-T5) to extract key information from SOPs and LORs, enabling automated analysis and prediction of admission likelihood.
- Built a machine learning pipeline for feature extraction from scanned PDFs, processing qualitative inputs such as research experience and technical strengths, transforming them into structured features for model prediction.
- Created a Flask-based web interface, enabling users to easily upload scanned documents, enter TOEFL/GPA scores, and receive real-time predictions and summaries of admission chances.
- Collaborated with faculty to understand the specific needs of the admission process, ensuring the solution aligned with academic goals and improved workflow efficiency.
Key Skills Utilized: Python, Flask, Hugging Face Transformers, scikit-learn, OCR (Tesseract), HTML/CSS, NLP, LLMs, PyMuPDF

Course Instructor & Graduate Teaching Assistant, *University of Wisconsin-Milwaukee*   *Aug 2024 – Present*
- Facilitate undergraduate classes on Java programming and Python programming, guiding students through both theoretical concepts and practical software development skills.
- Conduct interactive Q&A sessions to clarify complex programming concepts, debug student code, and enhance problem-solving abilities.
- Monitor student progress through examinations, lab assignments, and quizzes, providing targeted feedback to promote academic improvement.
- Collaborate with fellow instructors to align curriculum and teaching strategies, ensuring a cohesive learning experience and maintaining high academic standards.

Programmer Analyst*, Cognizant*   *Nov 2022 – Aug 2023*
- Engineered secure, high-performance payment gateway systems handling over 2 million daily transactions using Java, Spring Boot, RESTful, and SOAP-based APIs, achieving 99.99% uptime, SOA compliance, and reducing fraud rates by 15% through two-factor authentication (Email OTP).
- Enhanced backend performance by 20% through optimized data structures, multithreading, and integration of Singleton and Factory design patterns, streamlining real-time payment processing and cross-platform interoperability.
- Resolved 20+ critical frontend bugs in Angular and JavaScript, improved user experience, and automated CI/CD pipelines with Jenkins, maintained 85% test coverage using Jasmine, decreasing production defects by 30%.

Key Skills Utilized: Java, Spring Boot, RESTful APIs, SOAP APIs, Angular, JavaScript, Jenkins, Jasmine, Multithreading, Design Patterns (Singleton, Factory).

Junior Software Engineer, *Comau*   *Oct 2020 - Nov 2022*
- Developed and deployed 20+ scalable Spring Boot applications and RESTful APIs, optimized algorithms and data structures, and designed fault-tolerant backend services with RabbitMQ, JDBC, and Multithreading, improving system scalability by 25% and messaging reliability by 30%.
- Collaborated with frontend teams to resolve performance bottlenecks, create reusable Angular and JavaScript components, and enhanced user experience by 20% while reducing development time by 15%.
- Automated CI/CD pipelines with Jenkins and Docker, integrated OPCDA/OPCUA servers, and applied design patterns, reducing code redundancy by 15%, while monitoring systems with Prometheus and Grafana, achieving 99.95% uptime.
- Worked on-site with Mahindra and Fiat to integrate solutions, address client-specific requirements, and troubleshoot software during deployment, ensuring effective communication and ongoing technical support.
Key Skills Utilized: Java, Spring Boot, RESTful APIs, Angular, JavaScript, Jenkins, Docker, RabbitMQ, JDBC, Multithreading, Prometheus, Grafana, Client Engagement.

Internship Trainee, *Comau*   *Nov 2019 - Aug 2020*
- Developed an Android application for real-time production monitoring, increasing system connectivity and data processing efficiency by 25% by leveraging Java programming and integrating with the In.Grid IoT platform using Thingworx services.
- Improved plant productivity and quality by creating an interface that connects machines and robots, resulting in a 20% reduction in maintenance costs and a 15% enhancement in production efficiency.
- Streamlined platform development on Windows systems by utilizing Thingworx tools for JavaScript coding, enhancing database access reliability by 30%.
Key Skills Utilized: Java, Android Development, JavaScript, Thingworx IoT Services, In.Grid Platform Integration.

Software Intern, *Indeed Inspiring InfoTech*   *Nov 2017 - June 2018*
- Led a team of five in deploying scalable cloud infrastructure, enhancing operational efficiency by utilizing OpenStack.
- Contributed to big data processing capabilities by implementing robust solutions with Hadoop, resulting in a 40% increase in data handling speed.
- Developed a Java-based inventory management system, improving stock tracking accuracy and user experience by introducing automated features and user-friendly interfaces.
Key Skills Utilized: OpenStack, Hadoop, Java, Team Leadership, Big Data Processing, and Software Development.

EDUCATION

Master of Science, Computer Science, *University of Wisconsin-Milwaukee*   *May 2025*
- **Relevant Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Machine Learning
- **Achievements:** Graduate Teaching Assistant, Awarded the Chancellor's Graduate Student Award.

TECHNICAL SKILLS

- **Programming Languages**: Java, Python, JavaScript
- **AI & Machine Learning:** Retrieval-Augmented Generation (RAG), OCR, NLP, PyTorch
- **Frameworks & Libraries**: Spring Boot, Flask, Angular, Hugging Face Transformers, Scikit-learn
- **Cloud & DevOps**: AWS, Azure, Docker, Kubernetes, Jenkins, CI/CD
- **Databases & Messaging**: SQL, PostgreSQL, MongoDB, MySQL, Kafka, RabbitMQ
- **Monitoring & Observability**: Prometheus, Grafana
- **Testing & Development Practices**: REST APIs, Test-Driven Development, Git, GitHub, Agile Methodology, Maven, Gradle

CERTIFICATIONS AND PUBLICATIONS

- API's and Microservices developer certification
- Building Scalable Java Microservices with Spring Boot and Spring Cloud certification.
- Certified Red Hat System Administrator (RHCSA)
- **Copyright**: EXAMINATION PAPER SETTER AUTOMATION SYSTEM (Registration Number: SW-12888/2019)
- **Research paper**: Card Payment Using Three-Way Security, Published in JETIR, February 2020
  (https://www.jetir.org/view?paper=JETIR2002408)

AWARDS & ACHIEVEMENTS

- **People's Choice Award: Hackreation (Hackathon) by Mitobyte, 2025:** Won the People's Choice Award at the Hackathon for outstanding performance and innovation.
  Link: https://www.linkedin.com/feed/update/urn:li:activity:7322687650975404033/

- **Implemented Retrieval-Augmented Generation (RAG) with Azure OpenAI Service:** Earned a badge for successfully implementing RAG using Azure OpenAI Service, demonstrating expertise in AI technologies and document retrieval systems.
  Link: https://learn.microsoft.com/api/achievements/share/en-us/yashzode/XQMF3FBY?sharingId=5AAB7F38D62DAF2

References

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