RITHVIK DHANPAL

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EDUCATION:

Montclair State University (MSU), Montclair, NJ
Master of Science in Data Science   Expected Graduation Dec 2025
Relevant Coursework: Advanced Database, Statistics for Data Science, Deep Learning,
Data Mining, Big Data Analytics, Computer Algorithms & Analysis, Machine Learning   CGPA: 4.0/4.0
St. Martin's Engineering College, India, Hyderabad   Aug 2021
Bachelor of Technology in Electrical and Electronic Engineering   GPA: 3.3/4.0

TECHNICAL PROFICIENCIES:

- **Programming & Data:** Python, Java, SQL, R, Spark, Databricks
- **Frontend:** TypeScript, JavaScript (ES6+), React, Angular, HTML/CSS
- **Frameworks & Tools:** Spring Boot, Spring, Flask, Dash, Docker, Jenkins, AWS (Bedrock, SageMaker, Titan), Tableau, Git, VS Code, Eclipse, Google Colab.
- **Concepts:** Generative AI, Retrieval-Augmented Generation (RAG), OOP, REST APIs, Microservices, CI/CD, Distributed Computing, TDD, Identity Management (RBAC, OAuth2.0)

WORK EXPERIENCE:

Center for Academic Success and Tutoring (CAST), MSU   Oct 2024 - Present
Graduate Assistant & Supplemental Instructor (Python, Java and Applied Calculus Programming)
- Tutor 200+ students in Python, Java, Data Structures, Web Development, and Databases, improving average course grade.
- Lead Python, Java and applied calculus recitations and workshops; simplify complex ML/algorithm topics for diverse audiences.
- Develop interactive teaching materials and debug student code, sharpening problem-solving and communication skills.

Optical Health Solution Pvt Ltd (Medplus), Hyderabad, IN   Jun 2022 - Dec 2023
Full Stack Application Developer (Associate Software Engineer)
- Developed applications, micro-services using Java/J2EE, Spring, and various frontend frameworks serving 1M+ user.
- Developed and secured **user authentication & access control systems** (RBAC) across internal applications.
- Designed secure APIs to manage **sensitive user credentials** with encryption and audit logging.
- Contributed to the development of Medplus **e-commerce platform** for medicines, overseeing front-end to back-end integration.
- Maintained and developed applications for diagnostics, finance, and optical services.
- Utilized Java/J2EE, Spring Boot, React, and Angular for application development, and implemented CI/CD pipelines using Docker and Jenkins. Ensured accuracy and security of sensitive financial and healthcare data through audit logging and encryption.
- Standardized and validated data across e-commerce and diagnostics platforms, reducing reporting inconsistencies

Office of Student Belonging (OSB), MSU   Aug 2024 - Oct 2024
Student Production Assistant
- Organized and managed university orientation events, ensuring smooth onboarding for 1,000+ new students.

PROJECTS

- **Enhanced Parallel & Distributed Computing via Graph-RAG** (Research with Prof. Zhu and Prof.Wang)
  Implemented a distributed Graph-RAG architecture on CDER learning materials to achieve sub-second semantic retrieval.
- **AI Stylist – Personalized Outfit Recommendations** *(AWS Bedrock, SageMaker, Stable Diffusion)*
  Built a GenAI pipeline to recommend clothing outfits in real time; optimized inference latency by 25% through model tuning.
- **Amazon Titan Image Generator – Visual Ads for Octank Dog Food**
  Generated high-quality marketing creatives and evaluated model cost/performance trade-offs for production deployment.
- **AWS Bedrock Model Evaluation – AI Workflow Optimization**
  Benchmarked Bedrock LLMs (Claude, Titan, Llama) to design a cost-efficient AI inference strategy, reducing compute cost by 20%.
- **Food Inspection Analysis (Apriori Association Rules)**
  Mined City of Chicago food inspection data to identify high-risk facility patterns and generate actionable food-safety insights.
- **PCOS Detection & Analysis Web App (Flask)**
  Built an ML pipeline with SMOTE and PCA to predict PCOS risk, integrating an accessible web interface for non-technical users.
- **Global Earthquake Monitoring Dashboard (Plotly Dash, Folium, GeoPandas)**
  Created a real-time geospatial dashboard with interactive filters and REST APIs for rapid event monitoring.

CERTIFICATIONS (Planned/In Progress)

- **AWS Certified Machine Learning – Associate (Target Completion: 2025)**

ACHIEVEMENTS

- Maintained a 4.0 GPA while managing graduate assistantship, teaching, and research roles.
- Delivered multiple full-stack and GenAI projects emphasizing usability, scalability, and secure data handling.