RAJAT DUNGARWAL
Full-Stack Developer — Data Analyst — ML Engineer

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EDUCATION

University of Texas at Arlington, TX, USA   *August 2023 – May 2025*
Master of Science in Computer Science   *GPA: 3.92/4.0*
Relevant Coursework: Machine Learning, Software Engineering, Distributed Systems, Data Mining, Cloud Computing & Big Data

TECHNICAL SKILLS

Languages:	Python, Java, C#, JavaScript
Backend & APIs:	ASP.NET Core, Flask, Django, REST, JSON, JWT, OAuth 2.0
AI / Data:	Machine Learning, TensorFlow, PyTorch, Pandas, NumPy, Data Mining, ETL, Model Evaluation, Power BI
Cloud & DevOps:	AWS, Docker, Kubernetes, CI/CD, Git/GitHub, Microservices
Databases:	MySQL, PostgreSQL, MongoDB, Snowflake, BigQuery

PROFESSIONAL EXPERIENCE

Data Analyst - *University of Texas at Arlington, TX, USA*   *June 2025 – Present*
- Annotated and validated large-scale sugarcane root image datasets using CVAT, enabling supervised training of deep learning models for root segmentation research.
- Built standardized Python data-cleaning pipelines (Pandas, NumPy) across 5 biomedical and agricultural datasets, reducing data inconsistencies by 18% and accelerating ML training cycles by 25%.

Application Development Analyst - *Accenture (Client - JPMorgan Chase), India*   *August 2021 – July 2023*
- Promoted to Application Development Analyst within one year, recognized by management for high-impact contributions to enterprise software engineering initiatives.
- Engineered modular ASP.NET Core services and REST APIs backed by SQL Server, optimizing database queries and request handling to improve system throughput and performance by 25% handling thousands of daily transactions.
- Identified and resolved critical system bottlenecks in production environments, reducing application load times by 30% within 3 months through performance tuning, code refactoring, and algorithmic improvements.
- Implemented application monitoring and alerting using logging frameworks and Grafana dashboards, improving system observability and reducing production downtime by 40%.

Machine Learning Research Intern - *GRROOM, India*   *April 2020 – May 2021*
- Developed machine learning pipelines for fashion image classification using Python, web scraping, data preprocessing and supervised training with TensorFlow and PyTorch.
- Designed and executed image annotation and labeling workflows for fashion datasets, improving data quality and reducing annotation errors by 20%, contributing to improved model classification accuracy.

EDUCATIONAL EXPERIENCE

Graduate Teaching Assistant - *University of Texas at Arlington, TX, USA*   *August 2024 – May 2025*
- Mentored 50+ students in advanced algorithms, data structures and Python programming through weekly office hours & technical guidance.
- Developed performance tracking dashboards using Power BI and Python-processed data to monitor accuracy trends and identify learning gaps, enabling data-driven instructional improvements.

Artificial Intelligence Research   *August 2021*
- Authored and published **Thing Translator** (Eliva Press; available on Amazon), contributing applied AI research in ML and NLP.

PROJECTS

Monthly Retail Sales Dashboard (E-Commerce Business Intelligence)
Power BI, Python, SQL, Excel, Pandas, NumPy, Matplotlib, Seaborn, Jupyter Notebook
- Built an end-to-end ETL pipeline processing 10K+ ecommerce transactions, enabling executives to monitor revenue, customer segmentation, and profitability through a 15KPI Power BI dashboard.

Thing Translator (AI Product & Research Project)
TensorFlow , Android, Java, Matplotlib, TTS , NLP, Hyperparameter Tuning, Model Evaluation, Image Classification
- Developed a computer vision system using TensorFlow and MobileNetV2 transfer learning to recognize 80+ real-world objects, distinguishing the project through full model fine-tuning and on-device inference rather than offline experimentation.
- Productionized the model by converting it to TensorFlow Lite and integrating it into an Android application with object-to-speech translation, enabling real-time, user-facing AI functionality beyond a typical research prototype.

Personal Finance Tracker (Financial Planning & Budgeting Application)
Flask, MySQL, Git, Selenium, Docker, REST APIs, JSON, OAuth 2.0, JWT
- Designed and developed a full-stack financial application supporting 100+ daily transactions, enabling secure expense tracking, budgeting, and financial insights.
- Containerized backend services and deployed them on AWS with CI/CD integration, ensuring reliable deployments & production scalability.
- Implemented automated testing and applied software engineering best practices across the full SDLC to improve system reliability and maintainability.

CERTIFICATIONS

- **Create Generative AI Applications on Google Cloud** - Google
- **Machine Learning Operations (MLOps) for Generative AI** - Google
- **Python for Data Science** - IBM