Yatri Patel

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Education

Georgia Institute of Technology (GaTech), Atlanta, GA — Aug. 2023 – Present
Master of Science in Analytics (MSA)

University of Tennessee at Chattanooga, Chattanooga, TN — Aug. 2019 - Dec. 2021
Bachelors of Science in Computer Science: Data Science

Technical Knowledge

Programming Languages: Python, Java, R, SQL, JSON, DataWeave
Frameworks: Version Control Systems, MuleSoft (Anypoint Platform), REST APIs, Keras, TensorFlow, GraphQL
Tool and Technologies: Visual Studio, Git, GitHub, GitLab, Azure DevOps, Linux, Maven, Postman, Insomnia, Primavera P6

Work Experience

Tennessee Valley Authority, Chattanooga, USA — ***Software Engineer*** — May. 2022 - Present

- Designed & implemented enterprise-grade **RESTful APIs** within microservices architecture, enhancing system interoperability by **30%**.
- Spearheaded the design and implementation of a **centralized System API using MuleSoft** for Primavera P6, interfacing with 6 different foundational apps for seamless enterprise-wide data access.
- Owner of **18 foundational system** integrations handling **~500 records/minute**, ensuring reliability and efficiency across enterprise systems.
- Implemented best practices in microservices architecture, API design, and version control, increasing developer resources by **80%**.
- Developed **Azure DevOps (ADO)** build & deployment pipelines, improving CI/CD processes for rapid and stable software releases.
- Contributed to feasibility studies for AWS cloud migration of P6, focused on scalability, cost-efficiency, and modernization strategy.
- Regularly collaborated with cross-functional teams (PMs, QA, Security) in Agile sprints to deliver secure and scalable software increments.
- Provided mentorship to junior developers and authored detailed API documentation for internal knowledge sharing and onboarding.
- Drove cybersecurity efforts by leading enterprise-wide Multi-Factor Authentication (MFA) implementation.
- Actively managed **30+ P1/P2 incidents** and performed root cause analysis to ensure **99.99% uptime** and enterprise system reliability.
- Resolved complex P6 user, data and integration issues using **SQL**, ensuring seamless operation for **2,000+ users**.

Tennessee Valley Authority, Chattanooga, USA — ***Intern*** — Sept. 2020 – May 2022

- Developed a reinforcement learning model to optimize performance of AWS Deepracer, achieving 15% improvement over baseline models.
- Programmed Misty the Robot for 3 different interactive activities, boosting engagement by 80%.
- Built an interactive accident map using Python & Tableau, providing real-time insights into traffic incidents for 100+ users.
- Collaborated with 5 cross-functional teams to deploy IoT solutions, such as the InsightCM system, across 4 different plants.
- Managed Change Management for the Innovation Scouting Project supporting 12 teams.

Center for Urban Informatics and Progress — ***Undergraduate Researcher*** — May 2021 - Dec. 2021

- Led the project to optimize public transit by predicting ridership with **89% accuracy** using machine learning algorithms using **Python**.
- Worked cross-functionally with stakeholders to integrate socio-economic data for data-driven urban planning.
- Applied mathematical optimization and predictive analytics to enhance ridership forecasting.
- Analyzed and visualized energy usage of buildings and vehicles, creating an algorithm utilizing **Python, R** and **eGIS** that assigns vehicles to buildings based on location, size, and land-use characteristics.

Projects

Music Generation using Deep Learning — ***UTC***

- Developed a music generation pipeline using LSTM and GAN models in TensorFlow, processing MIDI files to generate notes and chords.
- Optimized GAN training to **~2.5 hours for 5000 epochs**, outperforming LSTM's **~6 hours for 200 epochs**, while mitigating "stuck chords".
- GAN demonstrated superior authenticity and faster training, while LSTM excelled in pattern recognition and note/chord variety.

Capitol Trade Data Analysis — ***GaTech***

- Developed an R-based analytical framework to investigate congressional stock trades for market outperformance and potential conflict of interest, correlating findings with politician demographics.
- Conducted comprehensive portfolio analyses segmented by overall performance, party, and age group, all benchmarked against S&P 500.
- Analysis revealing the overall politician portfolio returned 7.26% (Beta 1.051), slightly outperforming the S&P 500 (7.11%).

Real Estate Recommendation Dashboard — ***GaTech***

- Created a data-driven real estate recommendation system, presented on a Python-based Dash application, which consolidated 5 key datasets.
- Implemented a weighted ranking algorithm with 3 priority levels (High, Medium, Low) and normalized criteria (0-1 scale)
- Achieved average response times **under 5 seconds** and **user satisfaction score of 90%**, indicating high usability for house-hunting.

Notable Publications

- Ridership Prediction of New Bus Routes at Stop Level by Modelling Socio-economic Data using Supervised Machine Learning Methods *(Transportation Research Board 100th Annual Meeting)* — Jan. 2021
- Data Analysis and Visualization of Traffic in Chicago with Size and Landuse-Aware Vehicle to Buildings Assignment *(Smoky Mountains Computational Sciences and Engineering Conference)* — Dec. 2020
- Meet the Next Generation of Cybersecurity Women *(ISSA Journal)* — Oct. 2020