

POOJA MANJUNATHA SWAMY

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SUMMARY

Aspiring Data Analyst with 2.5+ years' experience in analytics, cloud systems, and software development. Graduate in MS Data Analytics Engineering at George Mason University. Skilled in PostgreSQL, data modeling, and scalable platforms. Interested in data science and AI-driven query optimization.

EDUCATION

Master's in Data Analytics Engineering

George Mason University – Fairfax, VA July 2023 – May 2025 **3.7 GPA**

Coursework: Coursework: Big Data Analytics, Database Internals, Data Visualization, Query Optimization, Machine Learning (ML), Graph Databases, Cloud Computing, Natural Language Processing (NLP), and Business Intelligence.

PROFESSIONAL EXPERIENCE

Makerspace Associate - MIX (Mason Innovation Exchange) Feb 2024 – May 2025

- Collaborated on interdisciplinary projects, integrating makerspace technology to support student innovation through hands-on learning and prototyping. Assisting professors in teaching class sessions, conducting workshops on 3D printing, laser cutting, podcasting, studio lighting, and sublimation printing, and mentoring students by providing guidance on course-related projects and technical problem-solving.

Mphasis Limited – Software Engineering Trainee Aug 2022 – Oct 2022

- Completed a structured 3-month industry training program covering Software Engineering, Data Analytics, and Cloud Computing. Developed expertise in SQL, and NoSQL databases, focusing on query optimization and transaction processing.
- Learnt Python for data analysis and machine learning techniques to extract insights from structured and unstructured data. Gained hands-on experience in Software Development Life Cycle (SDLC), Object-Oriented Programming (OOP), and UML 2.0. Strengthened Knowledge on full-stack applications like JavaScript, HTML5, CSS3, and worked with Web Architecture frameworks.

Intern – SONAR & Naval Systems Analyst, BEL Sep 2021 – Oct 2021

- Analyzed SONAR data using Python and SQL for submarine navigation.
- Conducted signal validation, pattern recognition, and acoustic analysis.
- Documented analytics workflows aligned with naval defense standards.

Campus Leadership & Coordination Jan 2024 – Jul 2025

- Creative Head – IST (Indian Show Time) | George Mason University Led cultural/educational events with 100+ attendees, handling logistics, promotions, and team coordination. Collaborated with Career Services and student orgs to enhance engagement and visibility.

TECHNICAL SKILLS

Programming & Scripting: Python, R, SQL, Bash, JavaScript, PowerShell

Big Data & Cloud: AWS (EC2, S3, Glue), GCP (basic), Hadoop, Spark, Databricks, Snowflake

Data Analysis & ML: Scikit-learn, TensorFlow, SpaCy, Transformers, NLP, NLTK, Statistical Modeling

Databases: PostgreSQL, MySQL, NoSQL, Neo4j, SQLite

Visualization & Tools: Tableau, Power BI, Excel, Google Sheets, Jupyter, GitHub

Multimedia & Others: Soldering, 3D Printing, Studio Lighting, Laser Cutting, Podcasting, Agile Methodology, ETL Pipelines

PROJECTS

ISO Linkage Graphers

- Developed a graph-based intelligence system to analyze fentanyl trafficking networks using Neo4j and AWS Neptune.
- Modeled entity linkages (email, phone, fax, chat IDs) as property graphs; performed entity resolution using Python (Pandas, SQL).
- Applied graph algorithms (Dijkstra's, PageRank, Community Detection) to detect key nodes and hidden relationships. Visualized network linkages with Tableau, Gephi, and Neo4j for real-time investigative insights.
- Migrated graph architecture to AWS Neptune with Gremlin for scalable querying and analysis. Ensured secure, optimized deployment using AWS EC2/S3; integrated structured, semi-structured datasets (key-value, 3NF).

Echopods – Invention Project (Co-Founder)

- Designing and prototyping an innovative audio device model with enhanced audio processing, ergonomic design, and noise isolation features.
- Working with Market Research, 3D Modeling, digital signal processing (DSP), and AI-driven noise techniques to refine the design.
- Currently in the Intellectual Property Certification (IP) stage and working towards securing a Provisional Patent, also prototype of the product. Presented in Pitch Competition and won second place.

Data Science and Applied Machine Learning Projects

- Diabetes Risk Prediction: Built ML models (Random Forest, Logistic Regression, Gradient Boosting) to forecast diabetes progression. Boosted accuracy through feature engineering and tuning.
- Job Market Analysis: Conducted web scraping and ML analysis to uncover salary patterns, top skills, and hiring trends using Python, SQL, and Tableau.
- Social Media Sentiment Analysis: Developed an NLP pipeline (TF-IDF, tokenization) to classify public sentiment and track opinion trends.
- Automated BI Pipelines: Designed real-time ETL workflows with Python (Pandas, TensorFlow), SQL, AWS, Power BI, and Tableau.
- Scalable ETL Framework: Used AWS (S3, Glue, EC2), PostgreSQL, and Python to support live business decision-making.
- IMDb Movie & TV Analytics: Built a Tableau dashboard analyzing trends in genre, ratings, and popularity; processed 10K+ records using Pandas, NumPy, and Matplotlib; hosted on GitHub.

Computing Volumetric Water Flow Rate (Award-Winning Project)

- Won “Best Innovative Project” by Karnataka State Council for Science & Technology for optimizing real-time water usage tracking and billing.
- Built an IoT-enabled monitoring system using NodeMCU, flow sensors, and embedded systems for household-level tracking. Developed a dynamic dashboard with Django, PostgreSQL, HTML/CSS, Bootstrap, and ThingSpeak API, achieving a 30–40% reduction in water wastage.
- Published and presented findings at IJCESR and a national conference on sustainable urban water management.