

Melvin Shajee

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SUMMARY

Analyst with over two years of professional experience, specializing in data analysis, signal processing, and statistical visualization. Familiar with ETL pipelines using PowerBI, Python standard library and Pandas, as well as analysis with R data tables. Able to leverage programming skills to extract insights from datasets and automate analytical workflows. Seeking to apply quantitative and technical skills in a data analytics/programming role.

WORK EXPERIENCE

NJIT Brain Stimulation Lab

Newark, NJ

Research Assistant

May 2024 - July 2025

- Affixed EEG caps and recorded data from ferrets before and after spinal injuries
- Applied finite impulse response filtering to remove linear trends and minimize artifacts from line noise
- Utilized reference electrode standardization technique to translate multichannel data into a working dataset
- Employed low-pass filter and resampled to prevent aliasing
- Topographically mapped 5 GB EEG datasets and rejected artifacts using Independent Component Analysis
- Automated data analysis workflows using MATLAB scripting to reduce manual processing time by 40%
- Designed and documented analysis pipelines using the MNE Python library and EEGLAB for analyzing microstates in schizophrenia patients

Kessler Institute

West Orange, NJ

Research Intern

Aug. 2024 - Dec. 2024

- Manually removed partial footfalls from TBI victim gait data using ProtoKinetics Movement Analysis Software
- Programmatically filtered and refined exported data using MATLAB and statistical knowledge
- Visualized key statistics (step length, swing time, stance time, initial double support time, terminal double support time, temporal and spatial symmetry) for research paper submission using Excel
- Conducted literature review assessing the effectiveness of VR in stroke rehabilitation
- Collaborated with NeuroTechR3 R&D team to test and provide feedback on beta stroke rehabilitation software

Spenego Software

Exton, PA

Quality Assurance Intern

Jun. 2023 – Sept. 2023

- Executed backtesting simulations within virtualized Linux environments for isolated and reproducible results
- Reported software bugs including steps to reproduce, expected behavior, observed behavior, and logs/error codes in RedMine Wiki
- Identified, reported, and resolved more than 30 software bugs by collaborating with the development team

PROJECTS

Machine Learning Concussion Evaluation

BME Capstone with Gulden Ophthalmics

- Collaborated to develop a React Native application for concussion evaluation through eye movement tracking
- Integrated react-native-vision-camera and TensorFlow models to automate eye movement recording, and AWS S3 for backend analysis using MediaPipe face tracking landmarks

EDUCATION

Rutgers University

Newark, NJ

M.S. Information Technology and Analytics

May 2026

New Jersey Institute of Technology

Newark, NJ

B.S. Biomedical Engineering

May 2025

GPA: 3.55/4.00

Cum Laude

SKILLS

Programming: MATLAB, Python (Pandas, scikit-learn, Keras, TensorFlow), SQL, React-Native, Java, C++

Data Analysis & Visualization: Excel (advanced charting, data manipulation, pivot tables, vlookup), MySQL, Microsoft Access, Power BI, Statistical Analysis, MATLAB (EEGLAB, statistical toolboxes)

Software & Tools: MS Project, Jupyter Notebook, AWS (S3), Linux, VirtualBox, TensorFlow, MediaPipe, SIMULINK, ANSYS, NI Labview, ProtoKinetics Movement Analysis Software