Tristan Louis

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Education

Queens College — 65-30 Kissena Blvd., Flushing, NY 11367
Bachelor of Science in Computer Science — Graduated: May 2025

Clubs & Leadership

- Weight Room Club—Active member focused on strength training, fitness, and discipline.
- Queens College Stock Broker Exchange Club—Engaged in financial markets, trading strategies, and investment analysis.
- Queens College CODE FOR ALL—Contributed to coding initiatives promoting accessibility and inclusivity in tech.
- D.I.C.E. (Diversity in Computing and Engineering)—Advocated for diversity and inclusion in STEM fields.

Experience

Software Development Intern
OpenQQuantify - Remote
June 2025 - Present

- Built full-stack features using **Flask, HTML/CSS, JavaScript, and SQLAlchemy**, including **REST APIs** and **LLM-powered endpoints**.
- Actively improving technical proficiency in **low-level systems**, **backend logic**, and **frontend tools** in a hands-on, community-driven engineering environment.
- Helped prototype **AI-integrated 3D simulations** with CesiumJS and contributed to early **digital twin and electronics pipeline integration**.

Data Engineer
Open Avenues Foundation: The Build Fellowship Highlight Reel: Automated Sports Content Generation
September 2024 – December 2024

- Spearheaded the development of an AI-driven sports highlight generator, **leveraging machine learning & computer vision**.
- Engineered a real-time video processing pipeline using **XGBoost** and **OpenCV**, integrating **ball tracking and automated transitions**.
- Refined models through iterative testing, **improving highlight accuracy by 12%** and reducing false positives in play detection.
- Collaborated with engineers and industry mentors, implementing feature engineering techniques to **enhance model performance**.

Projects

Predictive Analytics for Diabetes Management
Pandas, AWS SageMaker, AWS Wrangler, NumPy, scikit-learn (KMeans, PCA, StandardScaler), mlxtend (Apriori, association rules), Matplotlib

- Conducted **machine learning-based analysis** of diabetes treatment patterns using **classification models and clustering techniques**.
- Applied the **Apriori algorithm** for **association rule mining**, identifying key relationships between **A1C levels, medication changes, and emergency visits**.
- Developed **classification models** to predict patient outcomes, achieving **85.3% accuracy in medication change predictions** and **90.2% accuracy in emergency visit forecasting**.
- Performed **clustering analysis** to segment patients based on treatment plans, providing insights into personalized diabetes care.

Customer Credit Risk Prediction Using Machine Learning
Kaggle, Pandas, NumPy, scikit-learn (Logistic Regression, Decision Tree, Random Forest), XGBoost, Matplotlib, Seaborn, GridSearchCV, SMOTE

- Built a **credit risk assessment model** to predict **loan default probabilities** using **XGBoost & Random Forest**.
- Engineered financial features like **debt-to-income ratio, credit utilization, and payment history trends**, improving accuracy to **88%**.
- Implemented **SHAP (Shapley Additive Explanations)** for explainability, providing financial analysts with insights into **risk factors**.
- Built an **interactive dashboard using Streamlit**, enabling lenders to assess borrower risk in real time and make data-driven loan decisions.

PathMark Interactive BOT
Python, JSON, Flask, Gemini API, SpeechRecognition, pyttsx3, PyAudio

- Developed a **voice-activated assistant** that helps users find grocery items by querying a **nested JSON** inventory using natural language.
- Enabled customers to locate items via **keyword or voice input** and receive **audio responses**
- Planning the integration of NLP and voice input for future versions

Technical skills

- **Programming Languages:** Python, SQL, Java, C++, HTML/CSS, JavaScript
- **Machine Learning & AI:** XGBoost, OpenCV, TensorFlow, Feature Engineering, Data Preprocessing
- **Data Processing & Visualization:** Pandas, NumPy, Scikit-learn, Matplotlib
- **Databases & Backend:** MySQL, PostgreSQL, MongoDB, REST APIs
- **Cloud & Deployment:** Google Cloud Platform, Flask, FastAPI, Streamlit
- **Developer Tools:** Git, Linux, VS Code, PyCharm, IntelliJ

Certifications

- **Build Fellowship Completion—**An AI-powered sports highlight generation using ML & computer vision.
- **Code Path Intermediate Technical Prep (TIP102)—**Python, data structures, and algorithms
- **Udemy Full-Stack Web Development Bootcamp—**Node.js, Express, React, and database management.
- **Udemy Python for Data Science & Machine Learning—**Python, data structures, algorithms, and AI applications