

Nikhil Roy

21niroy70@gmail.com | 412-327-6294 | [LinkedIn](#): nikhil-roy-453441221 | [GitHub](#): 21niroy70 | College Park, MD, 20742

EDUCATION

University of Maryland, College Park, MD
Master of Science: Applied Machine Learning

Graduation: December 2025
GPA: 4.0

University of Pittsburgh, Pittsburgh, PA
Bachelor of Science: Data Science, Minor in Applied Statistics

Graduation: April 2024
GPA: 3.7

Skills: Python, SQL, R, HTML, Java, Jupyter Notebook, Scikit-learn, Pandas, NumPy, MATLAB, PostgreSQL, Gradle, Jira, Git, Agile, ETL, Statistics, Mathematics, predictive models, regression, Computer Vision, NLP, Cloud Computing, Deep Learning, communication

PROFESSIONAL EXPERIENCE

UnitedHealth Group

Pittsburgh, PA

Statistical Data Scientist Intern

June 2024 – Present

- Applied advanced statistical and mathematical methods to formulate optimal predictive machine learning models, classifying poor mental health days, impacting over 1.5 billion patients across the United States, India, and Ireland
- Published an executive paper detailing value proposition and strategy to present to hundreds of end clients and senior leadership through the Bridges program hosted by Carnegie Mellon University

University of Pittsburgh

Pittsburgh, PA

Neurocognitive Machine Learning Researcher

July 2023 – Present

- Deployed mathematical machine learning algorithms in Neural Cognitive Systems (NCS), achieving 92% accuracy in predicting students' cognitive states through theoretical statistical analysis
- Optimized data pipelines for neurocognitive data preprocessing, audio feature extraction, and visualization, advancing to a 30% reduction in data processing time

University Of Pittsburgh Medical Center (UPMC)

Pittsburgh, PA

Data Solutions Engineer Intern

May 2024 – June 2024

- Engineered a streamlined database architecture and aggregation process to analyze hospital patient SMS data sourced from unstructured Twilio JSON files, optimizing billions of data extracted daily
- Led the implementation of ETL schemas to facilitate seamless transformation of disparate data sources through database manipulation and migration utilizing SQL queries and Python scripts, resulting in a 35% increase in data processing
- Crafted a UI/UX design for a patient data information app using AngularJS and Figma tying in Java Spring Boot, enabling over 100,000 doctors at UPMC to efficiently access detailed patient data stored into PostgreSQL databases

PERSONAL PROJECTS

Pittsburgh Plate Glass Company (PPG) Machine Learning Engineer

- Developed advanced supervised learning algorithms to forecast crucial paint characteristics for a local Pittsburgh company
- Integrated Bayesian Statistical models and tuned advanced models from unstructured data, resulting in 35% reduction in business costs, 30% increase in cloud storage, and 20% improvement on accuracy through generating posterior predictions
- Evaluated and visualized performance metrics such as prediction intervals, predictive accuracy, RMSE, F1, and ROC to enhance business decisions and boost profits for distributions by over 140%

NFL Statistical Sports Data Analysis

- Conducted comprehensive analysis of 54 seasons of NFL data from 1970 to 2024, focusing on team performance, scoring distributions, and predictive analytics using Bradley-Terry Models, billions of Monte Carlo simulations, and Elo ratings
- Produced detailed reports and visualizations to strongly communicate findings for ideal business growth and management

Machine Learning Predictive Analysis

- Engineered a machine learning model from the ground up to predict unseen scanned recipients for a key business KPI, evaluating prediction and confidence intervals, improving forecast accuracy by 25% with optimization
- Incorporated intensive Bayesian Inference methods to generate a unique Laplace Approximation function that returned the optimal posterior mode and standard deviation, using gradient descent, Bayesian inference, K-clustering, etc.

LEADERSHIP

Taekwondo

- Triumphed 4 gold medals in international sparring tournaments, breaking boards, and competitive use of weapons
- Taught dozens of evening classes to students needing assistance of self-defense, sparring, communication, and discipline

South Asian Student Association (SASA)

- Coordinated 2 shows with diverse dance performances, embracing cross-cultural appreciation for thousands of students
- Lead events aimed at supporting community-based organizations such as Glen Hazel and YMCA Urban Garden Projects