

Neil Melkot

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EDUCATION

RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY (Rutgers School of Arts and Science)

Bachelor of Science in Computer Science and Minor in Cognitive Science

Expected Graduation: Dec. 2025

GPA: 3.56, Dean's List – Spring 2024, Fall 2024, Spring 2025

Relevant Coursework: Data Structures, Computer Architecture, Data Management, Discrete Structures

RARITAN VALLEY COMMUNITY COLLEGE (RVCC Center for Environmental Studies)

Associate of Science in Environmental Science

Graduation: May 2023

GPA: 3.62, Dean's List – Fall 2022, Spring 2023

PROJECTS

Waite – Smart Drinking & Safety Companion

Feb. 2025

- Developed a full-stack web application using an Express.js backend with a React front end and MongoDB for data storage.
- Integrated the Google Maps API to offer real-time, location-based recommendations for fun activities and safe venues—filtering out high-risk options (e.g. pubs, bars, liquor stores) automatically.
- Developed an advanced speech test module: Leveraged transformer-based speech-to-text conversion (using Wav2Vec2) together with sentence embedding and cosine similarity (via Sentence Transformers) to compare user speech against target phrases, providing real-time feedback on clarity and potential intoxication.

Bike-Sharing Demand Analysis

April 2025

- Conducted end-to-end analysis of Divvy bike-sharing data (2021–2024) merged with NOAA weather records using Python (Pandas, NumPy), handling missing values and outliers.
- Engineered features; temperature, precipitation, humidity, wind speed, etc., and computed Pearson correlations.
- Created composite weather-day categories and interactive spatial heatmaps to identify station usage patterns.
- Built and evaluated predictive models (Linear Regression, Random Forest, Gradient Boosting) in scikit-learn, achieving an R^2 of 0.90 on held-out data and informing dynamic fleet-rebalancing strategies.

Email Verification System for Rutgers Discord Servers

Jan. 2024

- Developed an automated email verification bot to streamline user authentication for Discord servers, enhancing server security and engagement; integrated features for email-based user verification, role assignment, and admin configuration.
- Utilized MongoDB for data persistence, ensuring verification codes expired securely after 10 minutes to prevent unauthorized access.

Ultimate 2D Shooter

June 2024

- Designing and developing a 2D multiplayer shooter game using Unity and C#.
- Implemented game mechanics, player controls, and physics using Unity's engine to create a dynamic and engaging gameplay experience.

PROFESSIONAL EXPERIENCE

Software Engineer Intern

The Digital Group Inc – Princeton, NJ

June 2024 – Aug. 2024

- Leveraged ASP.NET Core to develop robust, scalable, and high-performance web applications, implementing efficient backend services and RESTful APIs. Worked directly with client ZRG Partners LLC.
 - Enhanced UX and app responsiveness through client-side and front-end design using React, C#, and CSS, implementing admin editing features for dynamic software adjustment.

CAMPUS INVOLVEMENT

- Member, Undergraduate Student Alliance of Computer Scientists

Sep. 2022

- Events Chair, Rutgers YUVA (Sep. 2023 – Present)
 - Rutgers University Bridge Builder Award Recipient 2024

SKILLS AND INTERESTS

- Programming Languages: C#, OCaml, Java, JavaScript, Python, R, SQL | Web Development: CSS, HTML, React
- Data Analysis: JSON, Jupyter, MySQL, Rstudio
- Founder, Zombs FightFi Tournaments — 5,000+ members learning about the world through gaming.