

Roy Houwayek

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EDUCATION

Rutgers University, New Brunswick, NJ

Bachelor of Science, *double-major in Computer Science and Economics*, expected May 2025

GPA: 3.9

Honors: Dean's List (All semesters)

EXPERIENCE

Intermediate Microeconomics Learning Assistant, *Rutgers University* Expected September 2023 – May 2024

- Will facilitate a 3-credit weekly course where students apply lecture lessons to collaborative workshop activities.

Quantum Computing Research Assistant to Professor Mario Szegedy, *Rutgers University* March 2023 – Present

- Develop and train machine learning models to find quantum states suitable to initialize, manipulate and distribute entanglement sharing schemes.
- Analyze existing quantum cryptographic protocols, such as error correcting codes, in order to minimize leaked information in entangled, multiparty quantum communication.

2nd Place out of 465 teams Nationwide Hackathon, *Nationwide Mutual Insurance Company* April 2022

- Developed "Simplify," a cross-platform mobile app in React Native that tracks user driving behaviors by utilizing regional speed limit data and rewarding safe drivers with lower insurance premiums.
- Designed education modules, leaderboards, and ranking systems, for current policyholders to gain incentives for learning about key safety topics, creating a gamification opportunity for home and auto safety education.

Software Engineering Virtual Experience, *JPMorgan Chase & Co.* April 2022 – May 2022

- Analyzed live stock market data in Python and Typescript using JPMorgan Chase's financial analysis tools.
 - Displayed complex financial information using Perspective, an open-source financial modeling tool.
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PROJECTS

Shell 2.0 (Personal Command Line Shell)

- Shell 2.0 is a custom Linux Shell in C that interprets user commands, runs both user generated and Linux programs, and enacts directory traversal, process management, file redirection, piping, and wildcards.

University Admissions Predictor

- Trained a logistic regression model in MATLAB to predict a university applicant's chance of admission using historical data as well as the implementation of regularization and feature mapping methods.

HouseML (Housing Prices Simulator)

- HouseML is a regularized linear regression model in MATLAB that predicts the market price of houses using attributes such as size and location, and containing a built-in optimization toolbox to improve accuracy.

TextPress (Text File Compressor)

- TextPress is a Java program which efficiently stores data using a lossless data compression method based off of the Huffman Coding Algorithm, compressing data by ~40%.

Android Accelerometer

- Designed an Android application that tracks speed, acceleration, current location, and allows for multiple degrees of precision using the Google Maps API.
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TECHNICAL SKILLS

Java • JavaScript • HTML • CSS • Android Studio • MATLAB • C++ • C • Python

RELEVANT COURSES

Data Structures • Discrete Mathematics • Computer Architecture • Systems Programming • Analysis of Algorithms • Money and Banking • Operating Systems • Econometrics • Principles of Programming Languages