

Nathan Ballance

nathanfballance@gmail.com | <https://nballance.github.io/portfolio/#/> | New Brunswick, NJ 08901 | 908-627-2964

EDUCATION

Rutgers University | New Brunswick, New Jersey

Major GPA: 3.51/4.00 | Cumulative GPA: 3.31/4.00

Bachelor of Science: Computer Science

Expected Graduation: May 2021

Relevant Courses: Data Structures, Computer Architecture, Design and Analysis of Computer Algorithms, Principles of Information and Data Management, Internet Technology, Software Engineering, Artificial Intelligence, Software Methodology.

TECHNICAL SKILLS

- Java, Python, C, Spring Boot, React, Angular, HTML, CSS, JavaScript, MySQL, PostgreSQL, Assembly.
 - Git, GitHub, Bitbucket, Agile, Jira; Linux; Android Development; IAM, EC2, AWT, S3 and RDS in AWS.
-

PROJECTS

E-commerce Marketplace

- Designed a full stack Angular and Java Spring Boot e-commerce website for buying and selling products efficiently.
- Worked in team of three. Developed project using team-oriented tools, e.g., Bitbucket, Jira, and Agile development.
- Hosted MySQL database on AWS RDS, connected via Spring JPA, and communicated to angular via REST API.

Train Reservation

- Implemented a relational database system using AWS to support the operations of an online train reservation website.
- Worked in a team of three. Developed front-end user interface for customer and administrator logins using HTML.
- Collaborated on back-end using MySQL, Java, and JDBC connectivity between the user interface and database server.

Enforcement Management

- Developed Maven build enforcement manager to ensure users program with supervisor-approved libraries for a project.
- Implemented with a Java Spring Boot back-end which communicates with a PostgreSQL server with approved libraries.
- Designed front end using React. Displayed licensed and approved libraries. Allowed a supervisor to build a project.

Adversarial Search

- Completed an AI agent in Python for a turn-based adversarial game through grid interface using grid-based discretization.
- Created a game interface that displayed the board with all the nodes to update the board based on the player move.
- Evaluated heuristic values for all nodes using minimax search to indicate a better move for the agent or the adversary.

Tuition Manager

- Created a GUI Java application in OOP to form a list of students and their tuition calculations based on the number of credits and their enrollment status. Displayed list of students with associated costs and users added and removed students.

BMI Indicator

- Developed an Android Studio mobile application GUI that calculates BMI when the user inputs height, weight, and age.
 - Programmed GUI, in Java, to output a detailed analysis and lifestyle suggestion report based on age and BMI percentile.
-

WORK EXPERIENCE

IoTecha – Assembled, Programmed, and Tested Products – Cranbury, NJ

Dec. 2020 – Present

- Assembled hardware and installed software to be used across smart electric vehicle charging applications.
- Performed testing and quality assurance on products to be directly sold to multi-billion-dollar automobile manufacturers.

Union Township Middle School – Tech Instructor – Hampton, NJ

Sept. 2016 – May 2018

- Developed and instructed multiple computer programming related courses that accommodated students aged from 6 to 14.
 - Ensured 30 students mastered software editing applications and completed Java coding projects for class certification.
 - Documented students' progress to create transcripts for evaluating performance and conducting any needed remediation.
-

LEADERSHIP EXPERIENCE

Chess Club Leader and Coach

Sept. 2017 – May 2020

- Chair of Rutgers Chess Club: organized and planned events for club. Participated in PanAm Intercollegiate Competition.