

Nathan Ballance

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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 21

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

TECHINICAL SKILLS

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

E-commerce Marketplace

- Designed a full stack Angular and Java Spring Boot ecommerce website for buying and selling products efficiently.
- Worked in a team of three for development of the project using team-oriented tools, such as, Bitbucket and Jira
- 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 3 for front-end development of 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

- Maven build enforcement manager which ensures that a user programs with supervisor-approved libraries for a project.
- Implemented with a Java Spring Boot back-end which communicates with a PostgreSQL server with approved libraries.
- Front end is implemented using React which details licensed and approved libraries and allows a user 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 of 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 enrollment tuition calculations based on variables such as the number of credits and full-time/part-time, features included adding, removing, and printing of list.

BMI Indicator

- Developed an Android Studio mobile application GUI that calculates BMI when the user inputs height, weight, and age.
- Using factors of age group and BMI percentile in Java, had GUI output a detailed analysis and lifestyle suggestion report.

Bomb Lab

- Solved a program consisting of a sequence of phases with each phase expecting users to type a particular string on stdin.
 - Relevant Architecture: x86-IA32 Instruction Set Architecture (ISA), GNU Debugger, Linux operating system.
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WORK EXPERIENCE

Tech Instructor – Union Township Middle School

Sep. 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.
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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.