Joshua Boss

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EDUCATION

Duke University   **Durham, North Carolina**
B.S. Computer Science, Minor in Mathematics   *August 2018 – May 2022*

- **GPA:** 3.95/4.00; **ACT:** 35/36
- **Honors:** Garmin Ltd. Summer Project Competition 2nd place (2020), Dean's List with Distinction (Fall 2018), Dean's List (Spring 2019)
- **Relevant Coursework:** Theory & Algorithms for ML (CS 671), Software Design and Implementation (CS 307), Design and Analysis of Algorithms, Computer Architecture, Data Structures and Algorithms, Combinatorics, Multivariable Calculus, Linear Algebra, Probability

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, C, HTML/CSS, SQL, MIPS Assembly
Technologies: Git, ReactJS, Node, Express, Linux, Docker, MySQL, Jupyter NB, Pytorch, Jira, Junit, Arduino, VS Code, Google Cloud

PROFESSIONAL EXPERIENCE

Yext   **New York, NY**
Software Engineering Intern   *May 2021 – August 2021*

- Implemented multiple full-stack features for Yext Answers, an AI-powered search experience; wrote client and server-side code with React and java Play web framework; designed RPC API endpoints to handle backend logic; queried and filtered data from MySQL DB.
- Built table feature allowing Answers admins to view past searches, filter by user, and rate ML model performance (label training data)
- Added feature giving admins quick access to API request URLs and parameters for custom search queries on their testing platform
- Resolved various bugs, redesigned data table structure for key services, built latency telemetry dashboards with Prometheus and Grafana; used domain and test-driven development, dependency injection; reviewed teammates' code, partnered regularly with PMs/designers

Aryeo   **Boston, MA**
Machine Learning Intern   *May 2020 – August 2020*

- Developed a deep-learning object detection model that identifies 30 classes of household amenities in images found on Aryeo's real-estate content management service to validate property descriptions and integrate into search feature
- Conducted transfer learning on pretrained RetinaNet model utilizing Pytorch and Jupyter NB, on Google Cloud VM
- Improved model's mean Average Precision (mAP) 10% with ensembling and pseudo labeling; created UI with Streamlit web app tool

LEADERSHIP EXPERIENCE

Duke Applied Machine Learning Group, *Director*   *November 2020 – Present*

- Direct 250 member project-based tech organization offering software and ML development work to corporate and academic partners
- Grew membership 300%, doubled number of projects, fulfilled $50k worth of client contracts; oversaw foundation of multiple initiatives such as "Innovation Studio," a startup incubator, and two internship programs, "Tech for Equity," and "The Phoenix Project"
- Lead 9-member board meetings, direct project scoping calls with clients to assess business applications of software/ML, designed student training and onboarding infrastructure, handle legal matters (contracts, invoices, 501c3 status); head 20-person PM division

The Project Phoenix Summer Internship Program, *Cofounder, Director*   *April - August 2020, 2021*

- Organized remote summer internship experience, facilitating 240+ paid internship opportunities totaling $350k in stipends for Duke students who lost internships due to Covid-19; acquired CS projects from 80+ companies e.g., Coursera, Twitter, and the US DOD
- Designed organization structure, built program's Notion/Airtable platforms for 433 users, lead all student and client communications

PROJECTS

Personal Website (https://joshboss.me)   *August 2021*
- Built personal website from scratch using React, NodeJS, SASS, JavaScript, and HTML; deployed to custom domain via GitHub Pages.

Bloons Tower Defense Game (github.com/jsboss5/Bloons_Tower_Defense)   *October 2020 – November 2020*
- Built tower defense game with 3 friends from scratch in Java/JavaFX; user places towers to pop all targets traversing csv generated track
- Lead backend class and API design, wrote target movement logic; designed controller and created bi-directional map to fully encapsulate front/backend components; designed with MVC structure, factory patterns, interfaces, properties files; achieved 90% test coverage
- Created various towers, targets, and maps with unique features; added map selector screen, coins, tower shop, 3 difficulty levels, music

Arduino Boc-Bot   *October 2019 — December 2019*
- Programmed Arduino bot with C/C++ functions and logic that utilized RFID and QTI sensor readings to traverse a track, stop at hash marks, detect RFID tags, communicate with other bots, and display final results on LCD screen

Cooling Through Heating (https://fyd.duke.edu/projects/blamo)   *January 2019 — May 2019*
- Designed device in team of four to solve region-specific issue of inefficient AC systems, ensuring product was noninvasive and affordable (under $15 per unit); tested in NC home using Arduino temperature sensing, found a 5 °F temperature drop after 30 minutes

ACTIVITIES & INTERESTS

Activities: Duke Special Olympics (President), Duke Student Government (Dir. of Tech & Innovation), Project Build Pre-O Crew Leader
Interests: Playing Piano (Jazz and Classical), Fishing, Surfing, Poker, Running, Miami Dolphins Football