Joshua Boss

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EDUCATION

Duke University — Durham, North Carolina
B.S. Computer Science, Minors in Mathematics and Global Cultural Studies — *August 2018 – May 2022*

- **GPA:** 3.92/4.00; **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:** Software Design and Implementation (CS 307), Data Structures and Algorithms, Computer Architecture, Combinatorics, Multivariable Calculus, Linear Algebra, Probability, Physics (Mechanics and Electromagnetism)

TECHNICAL SKILLS

Languages: Java, Python, C, JavaScript, HTML/CSS, MIPS Assembly
Technologies: Git, Jupyter NB, Pytorch, Detectron2, ReactJS, SASS, JavaFX, Junit, Arduino, VS Code, IntelliJ, Google Cloud, Logisim

WORK & LEADERSHIP EXPERIENCE

Aryeo — Boston, Massachusetts (Remote)
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
- Presented to Google Representatives, Duke ML community, Aryeo Team; feature to be released in next product update

The Project Phoenix Summer Internship Program — Durham, North Carolina
Cofounder, Group Project Manager (GPM) — *March 2020 – August 2020*

- Organized remote summer internship experience, facilitating 200+ internship opportunities for Duke students who lost internships due to Covid-19 by acquiring CS projects from 70+ companies such as Coursera, Twitter, and the US DOD
- Designed program structure and role specifications, built out program-wide Notion platform for 433 users, worked with attorney to generate contracts, and conducted 18 hours of interviews for 72 intern candidates
- GPM for 2 projects; assembled bootcamp materials, conducted weekly sprints, and handled interpersonal conflict

Duke Applied Machine Learning Group — Durham, North Carolina
Executive Committee Member, Product Manager — *February 2020 – Present*

- Collaborate with Fuqua MBA candidate to identify and acquire clients and sponsors, assess application of data science and machine learning in business models, translate business needs to developers, create long-term vision of product
- Consolidated organization vision and strategized for external promotion after extensively interviewing lead DAML developers

Duke Conservation Tech — Durham, North Carolina
Lead Software Developer — *September 2019 - Present*

- Team partnered with Australian conservation group that tracks endangered green sea turtles using painted tags
- Lead developer on drone software team; write python code to utilize image scanning software from April Tag library using open cv algorithms to scan images; developed unique scanning detection method for high resolution images

PROJECTS

Brick Breaker Game — *September 2020*

- Built a Brick Breaker game from scratch with a partner in Java using JavaFX and its associated APIs; wrote extensive TestFX tests
- Player can control a paddle that hits a ball to break bricks, accumulate score, traverse multiple levels, and obtain 3 types of powerups

Baby Naming Tool — *August 2020 — September 2020*

- Developed backend Java program that analyzes trends in Social Security baby naming data to help parents name their newborns
- Program constructs database from 2 possible source types to answer 15 different questions all specified by the user; wrote 40+ Junit tests

Personal Website — *April 2020 — May 2020*

- Built personal website using ReactJS, NodeJS, SASS pre-processor, Gulp task manager, JavaScript, and HTML; deployed on local server

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 (http://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), Big Brothers Big Sisters (Mentor), Project Build Pre-O Crew Leader
Interests: Playing Piano (Jazz and Classical), Fishing, Surfing, Miami Dolphins Football