

Benjamin Lawrence

Duke Box 97805, Durham, NC 27708 | 214-558-7585 | benjamin.lawrence@duke.edu

EDUCATION

Duke University class of 2020

- B.S. in Computer Science, B.S.E in Electrical and Computer Engineering
- GPA: 3.688/4.000
- Relevant Coursework: Data Structures and Algorithms, Computer Architecture, Operating Systems, Computer Network Architecture, Linear Algebra, Probability, Differential Equations, Real Analysis, Topological Data Analysis, Signals and Systems, Microelectronic Devices and Circuits, Algorithms, Digital Systems, Optics and Photonics, Fields and Waves

WORK EXPERIENCE

Innovation Co-Lab Student Staff (August 2017 – August 2018)

- Maintained and used 60 Ultimaker 3D printers including the Ultimaker 2+, Ultimaker 2+ Extended, Ultimaker 3, and Ultimaker S5
- Maintained and used the Epilog Zing and Fusion laser engravers and the Trotec Speedy 400 laser engraver
- Maintained and used the Tormach 770 CNC milling machine and the ShopBot CNC mill
- Taught students and patrons how to 3D print, laser cut, and general makerspace etiquette
- Obtained over 1700 hours of 3D printing experience

Innovation CoLab General Student Manager (May 2018 – August 2018)

- Promoted from Student Staff to General Student Manager
- Managed schedules for approximately a dozen students working over the summer and trained them on how to use a makerspace and repair 3D printers
- Ran the online Advanced User Training Course which teaches Patrons how to care for 3D printers and use Duke's online system for submitting prints and reserving printers

Innovation CoLab Bluesmith and DesignHub Design Engineer (June 2018 – January 2019)

- Promoted from General Student Manager to design engineer on the research 3D printing teams
- Helped design and manufacture hundreds of cable holders to be dispersed across Duke that are 80% cheaper than the ones currently being used which has saved Duke over \$3,500
- Chosen as the team member to teach a class on Linux and RaspberryPi and their applications
- Maintained and used the ProJet MJP 3600 Series, Stratasys J750, Ultimaker S5, Gigabot XLT 3+, FormLabs Form 2, and the Mcor IRIS HD 3D printers, along with laser engravers, CNC milling machines, and a water jet cutter
- Used the tools mentioned above to complete approximately 40 jobs/month for clients with custom parts

Innovation CoLab Bluesmith Student Manager (January 2019 – Present)

- Promoted from Bluesmith and DesignHub Design Engineer to Student Manager of the Bluesmith side of the service
- Manage a team of four people to run Duke's Bluesmith service research 3D printing service
- Have weekly meetings with Professors and researchers to discuss manufacturing of specialized research parts
- Ensure customer satisfaction is met in relation to timeliness and quality of parts completed for +40 jobs/month
- Managed approximately \$50,000 worth of 3D printing and manufacturing jobs over the 2018-2019 school year

Amazon Software Development Engineering Intern (May 2019 – August 2019)

- Software Development Intern for Amazon Web Services
- Configured servers across five internal services and two global regions to send log data to AWS CloudWatch Logs
- Created a backend server using Python and AWS Lambda to query the logs from CloudWatch Logs
- Used React and AWS S3 to host a front-end website to access the Lambda backend
- Overall, replaced using ssh to log into individual servers and search logs in a terminal over a number of hours to accessing a user-friendly internal web page that can display hundreds of thousands of logs per minute

PROJECTS

Independent Study

- Reducing latency time between live video input and HTC Vive VR Headset using Python and C++

Facial Recognition Door Lock

- Used OpenCV with Python to build a facial recognition door lock out of a RaspberryPi and 3D printed parts

ADDITIONAL INFORMATION

Computer Languages: Java (1st language), C (Proficient), C++ (familiar), Python (familiar), MatLab (familiar)

Very knowledgeable with Linux, MacOS, and Windows

Certified to run the Duke Immersive Virtual Environment system (approximately \$1.2 million virtual reality system)

Honors and Awards: Dean's List, Eagle Scout