Benjamin Lawrence

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EDUCATION

Duke University class of 2020

- B.S. in Computer Science, B.S.E in Electrical and Computer Engineering, Minor in Mathematics
- GPA: 3.709/4.000
- Relevant Coursework: Data Structures and Algorithms, Computer Architecture, Operating Systems, 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, Computer Networks

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 Zing and Fusion laser engravers and the Trotec Speedy 400
- 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 machine shop 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 maker-space 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 Team Member (June 2018 – January 2019)

- Promoted from General Student Manager to member of the research team
- Helping 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 the Linux OS and RaspberryPi and its applications
- Maintain and use the ProJet MJP 3600 Series, Stratasys J750 3D Printer, Ultimaker S5, Gigabot XLT 3+ 3D printer, FormLabs Form 2 printers, and the Mcor IRIS HD paper printer, laser engravers, CNC milling machines, and a water jet cutter
- Uses 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 Team Member to Student Manager of the Bluesmith side of the service
- Manage a team of four people to run the Duke's Bluesmith service
- Hold Biweekly 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

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