Benjamin Sylvanus

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EDUCATION

Northeastern University **Boston, MA**
Bachelor of Science in Bioengineering; Signal and Image Processing *May 2022*
Minor in Computer Science
Relevant Courses: Algorithms and Data Structures, Database Design, Fundamentals of Computer Science I & II, Biomedical Imaging, Design of Biomedical Instrumentation, Healthcare Technologies, Linear Systems, Transport and Fluids, Bioelectricity, Dynamics & Control, Biomaterials
Activities: Bioengineering Club, Husky Startup Challenge, Weightlifting, Intramural Basketball and Soccer, the Downhillers, and RESIST

American College of Thessaloniki **Thessaloniki, Greece**
NU.in Study Abroad Program *Fall 2017*
Courses: Biology, Chemistry, Calculus II, Greek Culture and Language

TECHINCAL SKILLS

Python, Java, SQL, C++, GCP, MongdoDB, MATLAB & Simulink, LTspice, Fusion360

WORK EXPERIENCE

Martinos Center for Biomedical Imaging **Boston, MA**
Full Time Research Coop *July 2021 - Current*
- Primarily focused on histological analysis and diffusion MRI simulation
- Created an image processing pipeline and user interface to fix disconnected segments in cells
- Generated surface and volume meshes for diffusion MRI simulation in Spin Doctor
- Presented at the annual conference for the International Society for Magnetic Resonance in Medicine.
- Currently working on voxelization and Monte Carlo simulations

Respiratory Innovation and Simulation (RESIST) **Boston, MA**
Full Time Research Coop *May - December 2019*
- Created a cell detection program that worked in parallel with image reconstruction software. Created a total cell count for a slide when given a folder of images
- Debugged a program that quantified the tissue present in histological images of the lungs and aorta
- Performed daily In Vivo experiments and measurements for the majority of the lab's studies
- Coordinated with graduate students to design and perform two acute cotinine studies
- Ensured all chemical and animal protocols were up to standard in preparation for safety audit
- Designed and installed components for the wildland fire study

Playback Sports **Tacoma, WA**
Sales Associate *2014-2018*
- Worked in the repair shop, mainly on bikes and other ad hoc tasks
- Formulated product pricing and personally advised customers on their purchases
- Opened and closed frequently. Took on a managerial role as the store expanded to its second location

PROJECTS

Heart Rate Variability Monitor **Boston, MA**
Team Member *Spring 2021*
- Created a Heart Rate Variability (HRV) monitor using an Arduino MEGA2560 and pulse sensor
- Successfully implemented a Beat Detection System, Signal Filtering, Beat Rejection and HRV calculation

Wearable Computer Assisting Device **Boston, MA**
Team Member *Spring 2021*
- Used the electromyography (EMG) sensor on a BITalino Microcontroller to control the users keyboard
- Isolated the movements of specific fingers to perform a variety of keyboard shortcuts using Pyautogui