

Benjamin Sylvanus

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EDUCATION

Northeastern University

*Bachelor of Science in Bioengineering; Signal and Image Processing
Minor in Computer Science*

Boston, MA

May 2022

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

NU.in Study Abroad Program

Thessaloniki, Greece

Fall 2017

Courses: Biology, Chemistry, Calculus II, Greek Culture and Language

TECHINICAL SKILLS

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

WORK EXPERIENCE

Martinos Center for Biomedical Imaging

Full Time Research Coop

Boston, MA

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)

Full Time Research Coop

Boston, MA

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

Sales Associate

Tacoma, WA

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

Team Member

Boston, MA

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

Team Member

Boston, MA

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