BEN PIPERNO

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EDUCATION

Northeastern University, Boston, MA
M.S. Computer Science 2024 – 2026
4.0 GPA
B.S. Industrial Engineering 2015-2020
3.6 GPA

In Progress: Computer Systems, Computer Networking
Completed: Algorithms, Computer Graphics, Programming Design Paradigms, Game Programming, Fundamentals of Computer Science 1 & 2, Object-Oriented Design, Probability and Statistics, Engineering Database Systems, Simulation Modeling/Analysis, Stochastic Modeling, Differential Equations and Linear Algebra, Data Mining, Human Machine Systems, Quality Assurance, Biomedical Optics, Circuits and Signals, Medical Physiology

Academic and Personal Projects:

- Modern OpenGL "Marching Cubes" volumetric renderer. Source code available upon request.
- Investment simulation using Alpha Vantage API for stock historical prices in MVC structure. Source code available upon request.
- Script that generates 3D models of lung airways for respiratory simulation (RESIST lab, Northeastern University). See GitHub.
- Turn-based crafting/battle game based on *Circe* by Madeline Miller. See GitHub.
- Montecarlo simulation of Diffuse Optical Tomography through 2D matrix. See GitHub.
- Game design and art asset creation for personal projects and annual Global Game Jams.
- 3D asset creation for "Joycestick": a gamified VR experience of *Ulysses* by James Joyce at Boston College.

SKILLS

Languages: Java, C#, Python, SQL, C++, C, PowerShell
Software Tools & Systems: Git, Jira, Splunk, modern OpenGL, LabStreamingLayer, Qt, Postman API, AWS (DynamoDB, S3, SQS)
Electrical Tools: Oscilloscope, Signal Generator, HackRF Signal Transceiver, Beagle USB Protocol Analyzer
Quality: ISO 13485, CAPA, NCMR, Validation and Verification, CFR Part 11, Commissioning and Qualification

PROFESSIONAL EXPERIENCE (refer to LinkedIn for full history)

Backend Software Development Engineering Co-op Jan 2025 - Aug 2025
Delsys, Inc.; Natick, MA

- Updated public Python demo GUI and C# API to support precision triggering, high frequency analog inputs, and integrated 3rd party sensors. Verified timing precision with signal generator, oscilloscope, and in-house sensor toolkit.
- Wrote software validation steps for stories for tickets with adherence to medical device regulations.
- Refactored Lab Streaming Layer integration point, providing millisecond precise local network streaming capabilities for offline and real-time data synchronization.
- Added legacy file and .csv file reading support to data import pipeline. Wrote associated unit tests.
- Assessed customer technical questions and regression testing of public API and impact of USB protocol on legacy devices.
- Verified frequency band switching logic in sensors and receiver using HackRF transceiver.
- Participated in daily standups, and communicated project status in Jira with a testing-driven approach.

Systems Software Quality Assurance Engineer II Jul 2022 – Sep 2024
iRhythm Technologies, Inc.; San Francisco, CA (remote)

- Drafted, reviewed, and executed verification for Software as a Medical Device, analytical tool validation, and necessary regression testing.
- Managed internationalization/localization discrepancy resolution with a vendor team across 5 regions and 6 languages.
- Assessed mobile telemetry, web app, web services,internal data analysis tools, database, infrastructure, and integration with 3rd party software, including multi-factor authentication (Okta), cloud storage (AWS S3, DynamoDB), and computing systems (AWS SQS).
- Wrote automated API endpoint tests across multiple test environments and stacks.
- Automated test preparation, reducing time required by 50% using PowerShell scripts.
- Identified necessary regression testing for Validation and Verification activities between product releases.
- Coordinated testing and requirement review across multiple projects with a multidisciplinary project team.

Consultant Jun 2020 – Jun 2022
Sequence, Inc.; Framingham, MA

- Drafted and executed test protocols for facilities, custom HVAC, utility systems, process gases, and single-use gene therapy process equipment, including Sequence of Operations, graphics, alarms, interlocks.
- Minimized redundant testing through leveraging of vendor documentation while challenging system capabilities.
- Revised and created engineering drawings that detail process flow and interactions with nearby systems.
- Drafted specifications, risk assessments, and protocols with overall project and client strategy in mind.
- Earned value consistently in commissioning multiple systems within a dynamic project schedule, adjusting priorities according to client needs.