STEWART HOLLOWAY

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SOFTWARE DEVELOPMENT ENGINEER

Exceptional proven experience in frameworks and languages, Cloud Development via AWS, as well as in Machine Learning and Data Science. Adept at creating maintainable and extensive code, and planning, designing, and developing value-added solutions collaboratively with team members. Collaborates with cross-functional teams like to optimize technical designs and value-added outcomes. Core competencies include:

Amazon Web Services (AWS) | Internet Applications | Machine Learning | Control Systems (Digital and Analog)
Algorithms | Embedded Systems | Operating Systems | Digital Signal Processing | Networking
Sensor/System Integration | Robotics | Verification | Validation | Test | Cross-Functional Leadership

PRIMARY LANGUAGES

Python | C | C++ | C# | Java | TypeScript (& JavaScript) | HTML

EDUCATION

- **Master of Science, M.S in Computer Science** **2020-2023**
  - **Georgia Institute of Technology**; College of Computing, Computing Systems Specialization
- **Bachelor of Science, B.S. in Biomedical Engineering** **2011-2016**
  - **University of Texas at Austin**; Cockrell School of Engineering, Instrumentation and Imaging Specialization

Relevant Coursework:

Operating Systems, Computer Networks, Machine Learning, Deep Learning, Advanced Linear Algebra for Computing, High Performance Computer Architecture, Artificial Intelligence for Robotics, Artificial Intelligence for Gaming, Information Security, Advanced Internet Applications, Graduate Algorithms, Real Time Digital Signal Processing, Software Design and Implementation, Embedded Systems, Introduction to Computing, Calculus, Differential Equations, Discrete Mathematics, Numerical Methods, Probability and Statistics, Signals and Systems Analysis, Biomedical Instrumentation & Measurement

EXPERIENCE

Software Development Engineer – Amazon; Sunnyvale, CA **2022-2023 [RIF]**

Participate in the design, implementation, and deployment of successful internet-scale systems and services in support of Alexa Health and Wellness Initiatives. Assisted in definition of secure, scalable, and low-latency services and efficient internet processes. Work with cross-functional teams delivering on demanding projects.

- Assisted with the design and deployment of an internet application serving billions of consumer device, at consistent TPS of more than 4000.
- Drove Operational Excellence for various internet applications including monitoring, automated alarming, security, and reliability, resulting in more than 99.99% availability for customers
- Technologies
  - AWS Architecture, Cloud Computing, Serverless Tech, Continuous Integration/ Deployment (CI/CD), Dynamo DB, SQS
  - Java, JavaScript, Typescript, Python, Ruby, etc.
  - Junit, log4j, integration test suites, various profiling tools

CERTIFICATIONS

AWS Certified Cloud Practitioner – AWS Training & Certification **2023-2026**

Senior Systems Engineer – Avails Medical & Sartorius BioAnalytics **2020-2022**
Senior Bioengineer - Triple Ring Technologies **2017-2020**
Project Engineer - Abbott Labs **2016-2017**
Biomedical Engineer Intern - Luminex Corp **2014-2016**

Important Context on my Systems and Biomedical Engineering Experience

My background in Biomedical Engineering and my experience as a Bioengineer and Systems Engineer have given me a unique perspective on Software Development, and I have a proven track record of effectively managing software development projects and integrating software into medical devices. I have personally developed and integrated software projects into commercial medical devices. My experience working with a variety of medical device technologies and my ability to understand and solve complex problems makes me an ideal candidate for a Software Development role. Additionally, I was vetted and hired by Amazon and performed to an extremely high level, even though my division was impacted by organizational restructuring and laid off.

Notable Software Projects within Biomedical/Systems Engineering

- Wrote C++ Algorithms & Firmware on an STM32 MCU to control peripherals and analyze electronic BioSignals on a complex IVD device, executed Software Verification and Validation on this Software
- Implemented asynchronous Python control scripts for a Microfluidic platform, including PID control of a stepper motor/syringe pump and monitoring of bubble sensors and optical devices
- Architected automated Python analysis of key manufacturing metrics for biomedical disposables, and implemented them into assembly chains to improve throughput and yield
- Programmed a Windows GUI for operator control and analysis of a complex opto-mechanical device in C#, interfacing with various peripheral drivers to aid in experimentation and troubleshooting
- Designed and tested a proof-of-concept Machine Learning model in Python/PyTorch in order to identify organisms based on their metabolic curves in sepsis workflow (See patent below)

ADDITIONAL PROJECT EXPERIENCE

For additional information and additional hobbyist project experience, please visit my portfolio at **https://stewart-m-holloway.github.io/**

PATENTS & PUBLICATIONS

- Luan, L.; Wei, X; Zhao, Z.; Siegel, J. J.; Potnis, O.; Tuppen, C. A.; Lin, S.; Kazmi, S.; Fowler, R. A.; **Holloway, S.**; Dunn, A.K.; Chitwood R. A.; Xie, C. Ultra flexible nano electronic probes form reliable, glial scar–free neural integration. Science Advances. 2017, Vol. 3 no.2
- APPARATUS, SYSTEMS, AND METHODS FOR IDENTIFYING ONE OR MORE INFECTIOUS AGENTS IN A SAMPLE USING MACHINE LEARNING. Application No. 63/210,396. Filed Jun 15, 2021.
- ARTICLES AND METHODS FOR PERFORMING ASSAYS. Application No. 63/221,690. Filed Jul 14, 2021