

Chitvan Patel

[Cpatel2000](#) | [✉ chitvanp2000@gmail.com](mailto:chitvanp2000@gmail.com) | [in chitvan-patel-878218195](#) | [📍 San Francisco](#) | [📞 330-356-6086](#)

SUMMARY

Software Engineer with hands-on experience developing and integrating software for medical devices and complex hardware systems. Skilled in Python, and C/C++, C, .NET, with expertise in debugging cross-disciplinary software/firmware/hardware systems and building automation frameworks. Strong background in requirements gathering, system architecture, verification/validation, and regulatory compliance

EDUCATION

Santa Clara University

Masters in Electrical and Computer Engineering

Santa Clara, CA

June 2023

Relevant Courses: Natural Language Processing, Deep Learning, Computer vision, Machine Learning, Brain-Computer Interface, Advanced Computer Architecture, Machine Learning and Digital Signal Processing Using FPGAs, Software engineering, VLSI, Embedded Systems, Project Management

Pandit Deendayal Energy University

Bachelor of Technology, Electrical Engineering

Gujarat, India

May 2021

SKILLS

Languages: Python, C/C++, C#, Verilog, bash, shell

Tools: Javascript, Visual Studio, Jenkins, Git, React, GCP, AWS, Docker, RESTful API, Kubernetes, Jenkins, Jira, CI/CD pipelines, Linux

Protocols: I2C, USB, SPI, UART, RS485, RS232, ADC, DAC

Knowledge: Embedded Systems, BMC, BIOS, Debugging in complex multidisciplinary systems, test automation, radiological imaging, RTOS, failure analysis, root-cause analysis, medical device compliance (HIPAA, ISO 13485, IEC 62304)

EXPERIENCE

neuro42, INC.

Embedded Software Engineer

San Francisco, CA

February 2024 - Present

- Design and implement hardware and software including web and API development for neuro42's portable MRI devices, from requirements to production, shipping, maintaining and commercial deployment
- Implemented and optimized multi-threaded software components to handle concurrent imaging and data processing tasks on Windows systems
- Design, develop, test, and debug system software, supporting software QA and optimizing I/O performance for accurate and rapid performance critical image processing software
- Led software requirements gathering, architecture design, coding, code reviews, and verification/validation activities including unit, integration, and functional testing.
- Automated firmware/software deployment and validation pipelines using CI/CD tools like Jenkins and Git to maintain consistent test environments
- Applied full Software Development Life Cycle (SDLC) and adhered to change control processes to maintain traceability and compliance.
- Develop infrastructure for the secure transmission of sensitive clinical data to the cloud, ensuring compliance with healthcare data regulations (HIPAA)
- Gained working familiarity with medical device regulations including IEC 62304, ISO 13485, and ISO 14971 to support regulatory documentation and audits

Tarana Wireless, INC.

Hardware Integration Test Engineer

Milpitas, CA

November 2023 - February 2024

- Develop test scripts for automation and data analysis to diagnose and troubleshoot failed RMA units with GPS issues from field
- Conducted hardware bring-up of PCBs, evaluating electronic circuits, RF boards, FPGAs, and system modules
- Designed and implemented structured test plans, including unit testing, system integration testing, and regression testing
- Implement ATE test program solutions based on requirements in order to test the specific hardware modules, FPGAs and PCBA
- Assist in evaluation of electronic circuits and RF boards

Santa Clara University

Research Assistant, LLM

Santa Clara, CA

September 2023 - November 2024

- Lead the research and development phases of a cutting-edge chatbot project designed to serve as a teaching assistant for students
- Ingested a diverse range of educational resources into Elastic Search, optimized vector embeddings, and implemented Retrieval Augmented Generation (RAG) technology to enhance the chatbot's knowledge base. Ensured seamless integration with Elastic Search for efficient content retrieval

Tag-N-Trac

Design Validation and Test Intern

Campbell, CA

June 2022 - December 2022

- Developed a Python script to post-process DVT data of **12,000** temperature loggers by obtaining all data in a PPT-presentation format by integrating the python-PPTX library, resulting in a **7%** increase in revenue after improved data analysis
- Created a script that interfaces with a temperature logger via serial communication, continuously logs data over 24 hours, and saves the results in a time-stamped file for later review
- Created interactive dashboards using Tableau to identify trends and patterns in the data, as well as facilitate data-driven decision-making

PROJECTS

GPS

Embedded systems

- Developed a system using ARM-CORTEX Microcontroller with multiple data streams that include RS485, sending data through fiber optic link to a remote display module, with functionalities like turning on LEDs on remote modules with PC commands, reporting back GPS data such as Latitude and Longitude

8x8 Internet Switch

VHDL

- Performed gate-level verification for SMOKE test, 1 PORT test, 4 PORT test, CONCURRENT test for an 8*8 internet switch with system Verilog using Synopsys tool
- Achieved full functional coverage for the source and destination port variable combinations
- Independently, carried out the verification through System Verilog UVM