Thomas J. Stepp

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Experience

Software Engineer, Boeing AvionX 2017 – Present

- Architect of continuous integration suite for flight software team of 150 developers
- Develop website to provide accessible software metrics to enable management decisions
- Reduced Matlab code generation times from 10 to 1.5 hours with parallelization and caching
- Scrum master for Model-Based Development Processes and Tools team
- Plan and lead team through software upgrades of Matlab, Atlassian products, and Git

Network Engineering Intern, Facebook 2016

- Created scripts for automation of network switch testing with Tcl and Ixia hardware API
- Developed driver for IC chip with C++ to improve Wedge100 switch function and reliability

Systems Engineering Intern, GE Aviation 2015

- Produced MATLAB software tools to automate test validation for LEAP and Passport 20 engines

Conference Presentations & Awards

Boeing MATLAB Community of Practice, Model-Based Continuous Integration presentation 2020
Boeing Technical Excellence Conference, Two confidential technical presentations 2020
Boeing Intellectual Property Management, Meritorious Invention Award 2020
Boeing Simulation Conference, S-Function Integration with Simulink presentation 2018

Education

M.S. in Computer Science, University of Southern California Spring 2021

- Relevant Courses: Artificial Intelligence, Algorithms, Web Tech, Search Engines, Operating Systems

B.S. in Electrical Engineering, Purdue University Spring 2017

- Relevant Courses: Software Engineering Tools, Algorithms & Data Structures, OO Programming

Study Abroad, Universidad Carlos III de Madrid Spring 2016

- Completed engineering courses and projects in a culturally diverse environment

Projects

Machine Learning: Handwritten Digit Classification 2020

- Programmed neural network from scratch in Python to classify digits from MNIST database

Go-Playing AI Agent 2020

- Programmed Minimax algorithm in Python to beat other AI agents at games of 5x5 Go in real-time

3-D Maze AI Agent 2020

- Programmed A* algorithm in Python to solve large-scale 3-D mazes efficiently

COCOMO II Web App, USC Center for Systems and Software 2020

- Developed GitLab pipeline to run Jest test suite, collect code coverage, and deploy to production
- Upgraded pipeline to deploy app changes to staging environments and evaluate web performance

React News Website 2020

- React front-end allows users to browse, share, and bookmark news articles from their browser
- Node.js + Express back-end provides news articles from the NY Times and The Guardian APIs

Flask News Website 2020

- Plain JavaScript front-end provides user search, word-cloud, and slideshow of top articles
- Python + Flask back-end provides news articles from Fox News & CNN via Google News API

UNIX Socket Programming 2019

- Five C/C++ programs in distributed system for storing, querying, & calculating network delays

USB Audio Headphone Amplifier 2017

- Programmed Tiva Microcontroller in C to display volume meter and equalizer

Computer Security Python Projects 2017

- Used Python to write encryption algorithms such as AES and RSA