Matthew Martin Orth

EXPERIENCE

Software Development Engineer EDP, John Deere
April 2021 – Present

- Delivering embedded software, computer vision, machine learning, and robotics solutions

Test Automation Engineer EDP, John Deere
August 2020 – April 2021

- Created a system that takes test pre-conditions and steps and automatically generates a Python testing template for around 40-50% of test steps
- Updated over 35% of the tests from the core test base to remove flakiness
- Created 4 major testing framework additions and completed over 50 user stories
- Onboarded new team members in 1 week

Product Engineering Intern, John Deere
May 2019 – August 2019

- Developed a guidance (autonomous) software feature for the family of in-cab embedded displays that was released in the 20-1 Gen4 release
- Implemented efficient and maintainable software features in a legacy code environment
- Created code to analyze CAN messages to ensure efficient operation of the guidance system
- Verified implementations through automated and manual testing and code and design reviews

Other Experiences, Various Locations

- Information Technology Intern, John Deere – 2018
  - AWS Cloud Security
- IT App Dev. Intern, Principal Financial Group – 2017
  - Web App Requirements and Security

EDUCATION

Iowa State University, MEng., Computer Engineering
Ames, IA; Graduated: May 2021

- GPA: 4.0
- Emphasis in Machine Learning and Software Engineering

Iowa State University, B.S., Computer Engineering
Ames, IA; Graduated: May 2020

- GPA: 3.99; Summa Cum Laude; College of Engineering Dean's List
- Honor Societies: Eta Kappa Nu (HKN) and IEEE
- Activities: Cyber Defense Competitions and PrISUm Solar Car

TECHNICAL SKILLS EXPERIENCE

Language/Tool	*Professional*	*School/Personal*
Android / iOS	0 years	3 years
Assembly	0 years	1 year
AWS/Azure	0.25 years	0.75 years
C / C++	0.5 years	4 years
FreeRTOS	0 years	0.25 years
GIS	0 years	0.25 years
Git	2 years	4 years
HTML/CSS	0 years	1 year
Java	0.25 years	5 years
Jenkins	1 year	0 years
Linux OS	1 year	3 years
OpenCV	0 years	0.5 years
Python	1 year	3 years
Qt	0.25 years	0.5 years
REST APIs	0.5 years	1 year
SQL	0.25 years	3 years
Tensorflow/Keras	0 years	0.75 years

Concept	*Professional*	*School/Personal*
AI/ML/DL	0 years	1.5 years
Automated Testing	1 year	3 years
Software Engineering	2 years	5 years

PROJECTS

Single Line Shift (Straight Track), John Deere

- A guidance Gen4 Display feature that allows the operator to change the position of the current guidance track without affecting the original tracks

AutoTemplate, John Deere

- AutoTemplate is a system that I created that takes the pre-conditions and steps from a Rally test case and automatically generates a testing template with translated Python code for some of the steps

Allergy Safe, Personal Project

- An Android and iOS app that helps users with food allergies or intolerances ensure packaged food products are free from allergens or intolerances

Basketball Dribble Coach, Personal Project

- Basketball Dribble Coach is a Computer Vision project that tracks the number of completed repetitions, number of times the player has looked down, and the player's position while the player dribbles a basketball

Intelligent Code Editor, ISU Senior Design (1st place)

- An IntelliJ IDE plugin that translates natural language (English) to equivalent Java code (currently pending publication)