JOHN MCCARTHY

Product Manager | Software Engineer | TS/SCI Clearance

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SUMMARY

Achievement-oriented professional with a solid background in overseeing system architecture, defining goals, and managing project progress with local and remote teams. Organized and systematic team player, military leader, and command and control domain expert with development experience in Agile (Scrum) environments.

EXPERIENCE

Scrum Master / Product Owner (Fellowship)

Hypergiant Galactic Systems, JERIC2O

01/2024 – Present Remote

JERIC2O is a command and control map-based UI, fusing multiple data feeds into a common operational display. As a Product Owner, I prioritized development activities to meet national defense requirements and deliver value to end users.

- Led Agile initiatives (sprint planning, review, retro) for 14 members on 2 cross-functional teams
- Drove backlog refinement, grooming sessions, and technical exchange meetings across 6 sprints, deploying critical features for the C3BM program office in Q1 2024
- Resolved 8 impediments and reviewed 6 major code change requests, providing peer feedback for React state management & render lifecycle

Instructor Air Battle Manager / Software Engineer

United States Air Force

05/2016 – Present Oklahoma City & Germany

Functioned as a supervisor for 34 Airmen, acted as a command and control expert on the E-3 Airborne Warning and Control System, and built Air Force web applications.

- Starting in 2020, contributed code to the JERIC2O map display user interface by designing and implementing 3 frameworks and 32 React atomic components
- Led code review for 18,000 lines of code and fixed 98 critical static analysis findings
- Managed international teams of 4-30 people in high-stress environments, directing 112 strategic surveillance and reconnaissance missions.
- Instructed 212 students on radar and signal theory, electronic signals analysis, 3D battlespace management, and air operations

Software Engineer

BAE Systems

05/2011 – 05/2016 Nashua, NH

BAE Systems develops operational flight software, electronic support measures, and communications technology for the Dept of Defense. I worked on the Compass Call program as well as the real-time emitter identification and suppression program.

- Built an automated testing framework for a Cesium map web application utilizing the Selenium toolkit, used by 5 program teams
- Designed common messaging utility interface definitions for real-time embedded systems emitter identification and detection
- Identified and patched critical software vulnerabilities detected with static analysis and Jenkins continuous integration/deployment

ACHIEVEMENTS

- Certified Agile Scrum Master
- AF District of Washington nominee – DoD CIO Award for Innovation
- AF District of Washington nominee; AF Alison Award for Innovation
- 2022 Distinguished Graduate, Squadron Officer School
- 2022 Air Force Air Battle Manager of the Year nominee

SKILLS

Typescript	React	CSS/HTML
MapBox	Java	Python
Selenium	Sonarqube	Docker
SQL/DBMS	GraphQL	Grafana

Agile Jira Confluence CI/CD
Gitlab Jenkins Sprint Planning
Scrum SAFe Product Management

Product Vision Complex Problem-Solving

EDUCATION

Master of Science: Management

Troy University

03/2017 – 12/2018

Bachelor of Science: Computer Science

Rochester Institute of Technology

03/2017 – 12/2018

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PROJECTS

JERIC2O – Advanced Battle Management Systems

01/2020 – Present United States Air Force

Implemented designs and frameworks for a common operational picture map display single page web application. Integrated four datasets for visualization using MapBox, React, and Next. Led 16-person geographically separated team discussions and code review for over 18,000 lines of code changes.

Eliminated 138 critical and major Sonarqube static analysis findings and increased test coverage to 90%, facilitating a Certificate to Field / Authority to Operate (CTF / ATO), and enabled four user feedback and live demonstration sessions.

ParrotSour – Battle Management Training Software Suite

05/2020 – Present United States Air Force

Randomly generates over 15 categories of enemy aircraft formations for Air Battle Managers to practice radio communication and simulates legacy system interaction for unclassified, globally accessible training on the Air Land Sea Application Center standards.

As the sole Developer and Product Owner, I built ParrotSour using React TypeScript, leveraging npm packages, adhering to linting patterns, and employing modern web design paradigms. The application creates and displays aircraft, presenting users with a system agnostic training environment. It incorporates sophisticated layered algorithms to generate correct answer communication statements for comparison with user-produced responses. The program introduces simulated movement, assigning each aircraft an intent to enhance the overall intelligence of the simulation.

Parrotsour.com is used daily by 3,200 controllers from 19 Allied nations to train Battle Managers in Allied tactics, techniques, and procedures, with a 99% service availability.

Airspace Deconfliction Tool

01/2017 – 08/2018 United States Air Force

Parses Air Tasking Order aircraft to provide asset information, accepts Airspace Control Measures definitions to interpret airspace allocation, and tracks asset 3D assigned airspace and altitudes.

I developed algorithms to calculate, detect, and recommend fixes to any calculated safety of flight issues to ensure assets are appropriately separated and reduce risk of fratricide. It has been operational on the E-3 for over 7,000 combat hours for 22,000 coalition assets in a 1.2 million square mile operational area.

Selenium WebDriver Testing Framework

03/2013 – 05/2016 BAE Systems

Designed and implemented a user interface testing framework using the Selenium library. This framework wraps the Selenium library in a custom testing framework that allows other developers on the team to rapidly generate tests to meet integration testing requirements.

Complex user interactions are programmatically conducted to ensure application and supporting backend services respond correctly. By maintaining a Jenkins CI/CD pipeline, I triaged, assessed, and addressed static analysis and runtime defects using Coverity.