Jonathan D. Tan
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Experience

NASA Jet Propulsion Laboratory-Pasadena, CA August 2021-Present

Avionics Systems Engineer – AEM Project

- Architected an AI-enabled avionics testbed integrating System-on-Chip (SoC) hardware and high-bandwidth sensors to enable real-time computer vision driven perception and autonomy

Instrument Systems Lead – LOTUS Project

- Provided technical leadership for major acquisitions: managing schedule, budget, and objectives for a cross-functional team spanning opto-mechanical, electrical, thermal, software disciplines

Deputy Integration and Test Lead – CADRE Project

- Led the end-to-end CADRE flight hardware delivery of an autonomous lunar rover system, owning spaceflight qualification of mechanical, electrical, ground, and flight software interfaces
- Architected and built the Python-based test infrastructure for a multi-agent autonomous robotic system, leading a team to deliver an automated functional verification suite that reduced test time by 75%
- Developed communication drivers, backend infrastructure, and real-time dashboards for FPGA-based avionics, enabling live data visualization and analysis during integration and environmental testing

Software Systems Engineer – CADRE Project

- Architected and implemented GNC sensor software for a robotic system, integrating vision systems and IMUs, and developed robust lander communication interfaces to enable mission-critical operations

End to End Information Systems Lead – ISLAND Project

- Architected and integrated full-stack information systems spanning enterprise ground networks, flight hardware, and cloud infrastructure, ensuring reliable delivery of mission-critical data
- Triaged software bugs, managed change control, and provided technical guidance to senior leadership on schedule, budget, and risk for an enterprise network

Columbus Technologies (JPL On-site)-Pasadena, CA January 2020-August 2021

Software Integration and Test Engineer – ISLAND Project

- Led a cross-functional software test team in debugging software components running on VxWorks Real-Time Operating System (RTOS), automating regression testing and streamlining bug finding

Booz Allen Hamilton-El Segundo, CA November 2016-January 2020

Cybersecurity Technologist

- Delivered hardware-in-the-loop cyber-physical testbeds, training, and software for a successful live field demo of offensive cybersecurity capabilities, winning a $1.5M contract and new clients
- Led the development of hackathons for the U.S. Navy HACKtheMACHINE series in Boston, Seattle, and New York, successfully guiding hundreds of participants through technical challenges

United States Marine Corps June 2014-August 2016

Student Naval Aviator (Medically Retired)

Education

M.S. Electrical and Computer Engineering - *Johns Hopkins University* Expected 2026
M.S. Engineering (Cybersecurity) - *University of California, Los Angeles* Awarded 2020
B.S. Aerospace Engineering - *University of California, Los Angeles* Awarded 2014

Certifications and Licenses

- Certified Information Systems Security Professional (CISSP)
- FAA Part 107 Unmanned Aircraft System Remote Pilot

Skills and Abilities

Software and Analysis: Python, C++, MATLAB & Simulink, Docker, ROS/ROS2, VSCode, Git, DevOps
Hardware: Embedded Systems, Microcontrollers, Electrical Test Equipment, Harnessing, PLCs, FPGAs
Robotics: Kinematics, Sensor Fusion, Computer Vision, Perception, Image Processing, Radiometry
Networking: CAN Bus, Wireshark, netcat, socat, RS232, RS422, MIL-STD-1553, SPI, TCP/IP
Databases, Visualization, Systems Administration: Grafana, InfluxDB, SQLite, Unix Command Line