



DAVID K. TAN

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CLEARANCE

Fully Adjudicated TS/SAP | Active Secret Clearance

TECHNICAL SKILLS

- Programming: C++, Python, Java.
- Software Engineering: Object-Oriented Design (OOD), Agile/Scrum, Unit & Integration.
- DevSecOps: GitLab CI/CD, Jenkins, Kubernetes, Docker.
- Platforms & Cloud: Linux, AWS, Red Hat Enterprise Linux (RHEL).
- Testing & Validation: Unit Testing, Integration Testing, Debugging.
- Modeling & Simulation: 6-DOF Flight Dynamics, Missile Simulation and Monte Carlo Analysis.

PROFESSIONAL EXPERIENCE

Software Design Engineer III, Torch Technologies, Jun 2026 - Current

- Developed C++ and Python model-development and simulation-execution features for integrating updates across 3 software components and improving debugging workflow for model validation.
- Diagnosed and resolved simulation defects in C++/Python using Linux, Visual Studio, Git, and unit/integration testing, reducing recurring issues by approximately 10%.
- Converted requirements into design updates, code changes, and test documentation, helping reduce integration rework by approximately 15%.
- Integrated model updates with other engineers: software, systems and simulation engineers.

6-DOF Modeling & Simulation Engineer, I3, Mar 2026 - Jun 2026

- Designed, tested, and integrated C++11 autopilot control logic for the LRPM 6-DOF missile simulation on RHEL 8. Developed four kinematic guidance models and validated behavior against guidance, sensor, and flight-dynamics components with 100% requirements traceability.
- Executed V&V studies by translating requirements into testable simulation scenarios and Monte Carlo runs.

Software Engineer II, ALKU, Sep 2024 - Jan 2026, Utah

- Developed, reviewed, and tested C++11 6-DOF flight-dynamics models for LGM-35A Sentinel ICBM boost and post-boost performance, maintaining 100% traceability to flight-performance requirements.
- Diagnosed and resolved simulation inconsistencies by analyzing flight behavior and refining underlying model assumptions, improving model fidelity and reducing downstream validation effort.

Software Engineer I, Space Dynamics Laboratory, Jan 2023 - Sep 2024, Utah

- Built and deployed C++/Python processing modules within the FORGE MDPAF ground framework, ingesting and transforming OPIR satellite mission data into operational warnings and alerts.
- Designed modular FORGE MDPAF components for SBIRS and Next Gen OPIR mission-data processing. Served as technical lead, advising Program Managers and government stakeholders on implementation status, risks, and technical tradeoffs.

PROJECTS

Mission Planning Dashboard

- Built full-stack mission planning dashboard with role-based workflows, REST API endpoints, and audit logging, reducing planning data entry errors by 30%.

Missile Flight Dynamics Simulation

- Built a standalone C++ 6-DOF missile simulation project with autopilot control logic, guidance interfaces, and flight-dynamics behavior; validated model behavior through Monte Carlo analysis.

EDUCATION

Master of Science, Computer Science Jul 2027
Georgia Institute of Technology

MBA, Master of Business Administration Dec 2023
Louisiana State University

Bachelor of Science, Computer Science Dec 2022
Valdosta State University

CERTIFICATIONS

CISSP | CKA | CKS | AWS Solutions Architect | Security+ | PMP

PUBLICATION

- Co-authored peer-reviewed Springer publication on distributed fault-containment simulation using randomized scheduling, published in *Advanced Communication and Intelligent Systems*.