

Philip Cheng

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WORK EXPERIENCE (Lockheed Martin Space, 15 Years)

Avionics Design Lead / Certified Principle Engineer (CPE) — 2018 to Present

- **Avionics Vehicle Lead and CPE** — Responsible for design, test, verification, and sell-off of instrumented reentry test vehicles to be used in next generation SSBN missile compartment development
- **Electromagnetic Interference (EMI) Test Lead** — Led a multi-functional team in requirements verification planning, development of test plans, test procedures, and support equipment design
- **Nose Tip Recession Sensor Design Lead** — Led a multi-functional team in development of an ultrasonic sensor package for measuring atmospheric reentry material effects, creating and meeting a streamlined project plan, and accelerating EDU development to meet critical test milestones
- **Model Based Engineering (MBE) Lead** — Responsible for design tool integration, model development, and digital transformation for a group of ten electronics, software, and guidance navigation & control (GNC) engineers
- Supported IRAD proposal / analysis work related to my certified products
- Engineering Material Review Board (EMRB) Certified
- Control Account Manager (CAM) Certified

Embedded Software Development Project Lead / Developer — 2016 to 2017

- Coordinated team of ten software developers, guidance navigation & control (GNC) engineers, and testers
- Delivered three major flight software releases to meet strict avionics hardware integration test deadlines
- Developed software interfaces for tightly coupled IMU / GPS navigation, integrating new GPS hardware
- Implemented continuous integration unit testing in GitLab to streamline software production and test
- Developed telemetry decommutation software (C / Python / Matlab) and performed integration tests
- Implemented multiple selectable telemetry data formats for improved overall bandwidth utilization
- Troubleshoot and corrected hardware / software integration test issues

Avionics Production Subcontracts Manager and CPE — 2010 to 2015

- Coordinated team of five GNC engineers, subcontracts, and quality assurance
- Managed programs for avionics production, test, support, and post-flight data analysis
- Managed hardware production schedule, and ran technical meetings, data reviews, and design reviews
- Worked directly with customer on requirements and interfaces for a next-generation hardware development
- Led several root cause analysis efforts on test anomalies, leading to hardware design / process improvement

Engineering Leadership Development Program (ELDP) — 2007 to 2010

- **Assembly, Test, & Launch Operations (ATLO)**
 - Completed communication systems special test equipment (STE) design and calculated RF link budgets
 - Coordinated specifications and trade studies with potential suppliers to meet system requirements
- **Business Development / IRAD**
 - Developed a risk & opportunity management plan for a massive laser communication satellite proposal
 - Integrated various systems engineering tools into a single automated system
- **FPGA Design and Verification Engineer**
 - Developed a NACK-Oriented Reliable Multicast (NORM) FPGA, using System Verilog / Verilog HDL
 - Derived the FPGA detailed design requirements, interface documentation, and verification plans

Communication Systems Design Engineer — 2005 to 2007

- Performed modeling and simulation of a satellite global communication system, using Matlab and C++
- Developed CDMA channel selection algorithms used to maximize system capacity and Quality of Service (QoS)
- Developed several tools for analysis and data evaluation of simulation output

EDUCATION

- M.S. Electrical Engineering, **Stanford University (2010)**
- Space Systems Design Technical Development Curriculum, **Santa Clara University (2008)**
- B.S. Electrical Engineering & Computer Science, **University of California Berkeley (2004)**

COMPUTER SKILLS

- Design Tools: Zuken e3.series, Zuken CR-8000, OrCAD Pspice, Matlab, Simulink
- Software Tools: Visual Studio, Eclipse, VxWorks / Workbench, Collaborator, GitLab
- Programming Languages: C, C++, Python, Java, JavaScript, HTML, SQL
- Operating Systems: Windows, Red Hat, Ubuntu, Debian, macOS