ALEXANDER FORD

Physicist • Engineering Manager

alexlford.com
0000-0001-6805-9787
Illinois: BS & MBA
Denver, CO
alexlford
Kansas: MS & PhD

EXPERIENCE

09/2021 – present
Boulder, CO
Relay Ground Station - Asia
Space Based Infrared System (SBIRS) Programs

Systems Engineering Manager 3 — **Northrop Grumman: Space Systems**

Functional manager of the Systems Engineering section in the Operational Exploitation Systems (OES) Operating Unit. I oversee 2 managers and ~40 individual contributors who specialize in Overhead Persistent Infrared (OPIR) ground processing.

Systems Engineering, Integration, and Test (SEIT) Lead for the design, execution, verification, and build of 6 relay ground stations on Guam. Scrum Master for the program's Agile development. Technical oversight of the subcontractors for the ground terminal equipment and antennas.

Day-to-day responsibilities include employee engagement, performance management, career development, proposal support, employee rewards and recognition, strategic hiring, employee skills development, labor forecasting, and collaboration with program management.

09/2019 – 09/2021
Baltimore, MD
Re-scalable Aperture for Precision Targeting Radar (RAPTR)

Hardware Engineering Manager 2 — **Northrop Grumman: Mission Systems**

Functional manager of the Computational Electromagnetics (CEM) group in the RF Subsystem Design and Test section.

Managed the CEM internal research and development activities for new tools and techniques.

Lead an advanced optimization effort that depended on collaboration with an outside company.

01/2018 – 09/2019
Baltimore, MD
Surface Electronic Warfare Improvement Program (SEWIP)

Principal Engineer, RF Microwave Design — **Northrop Grumman: Mission Systems**

Engineer in the CEM group working on development of active phased array antenna architecture and an industry leading, in-house electromagnetic software toolkit.

Design and development of additively manufactured antennas, including a waveguide antenna with integrated filtering and a conformal line array antenna.

11/2017 – 01/2018
Mount Pleasant, SC

Project Manager — **Hawkes Learning**

Lead of the creation of physics courseware for universities and community colleges by developing course curriculum and educational content.

08/2010 – 05/2017
Lawrence, KS

Graduate Research & Teaching Assistant — **University of Kansas: Department of Physics and Astronomy**

Research on high energy astrophysics and cosmology. An electron-positron cascade mechanism in magnetospheres around spinning black holes. Instructor of undergraduate physics lab.

HONORS & AWARDS

Board Member – KU Physics and Astronomy Alumni Board

Innovation Award – Ultra-small, Ultra-wideband Antenna for High Shock and High Temperature Environments

New Technology Award – A Novel 1-D Periodic CEM Algorithm Enabling Fast High Fidelity RF Platform Optimization

Good Engineering Award – A Novel Re-Scalable, Wideband, Common Panel Aperture with Innovative Second Harmonic Suppression

E. E. Slossen Award – Outstanding Graduate Teaching Assistant

SELECT PUBLICATIONS

Prototyping an S-Band Conformal Line Array Antenna on a Partial Wing Surface – IEEE AP-S/URSI

Electron-positron cascade in magnetospheres of spinning black holes – Phys. Rev. D

Quasicollisional magneto-optic effects in collisionless plasmas with sub-Larmor-scale electromagnetic fluctuations – Phys. Rev. E

Transport of and radiation production by transrelativistic and nonrelativistic particles moving through sub-Larmor-scale electromagnetic turbulence – Phys. Rev. E

PROFESSIONAL CERTIFICATIONS

Systems Engineering Fundamentals Certificate Program – Caltech

Capture Strategy Executive Program – University of Chicago

Project Management Certificate – Google

Professional Scrum Product Owner I – Scrum.org

Modeling and Simulation of Phased Array Antennas – Georgia Tech