Teddy Herrera

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OBJECTIVE

As a Marine Corps Officer, I lead in demanding environments, serving in both technical and managerial roles. My academic and professional interests are focused on optimal control and trajectory optimization for autonomous systems.

EDUCATION

M.S. in Electrical Engineering, Naval Postgraduate School **GPA: 3.85/4.0** Sept 2025

Specialties**: Signal Processing, Radar/Sensors/Electronic Warfare, Robotics**

Thesis: **3D Point Cloud Generation using Interferometric Synthetic Aperture Radar (SAR) for Target Recognition**

B.S. in Mechanical Engineering, New Mexico State University **GPA: 3.24/4.0** May 2019

Senior Design Project: **Smart Wearable Sensors for Motion Tracking** – link to presentation: https://bit.ly/3YK1xiR

EXPERIENCE

United States Marine Corps, Captain (Air Support Control Officer & Electronics Engineer) June 2019 – Present

- Performed trade studies and provided technical recommendations for emerging and existing energy and power technologies as the Expeditionary Energy Officer at Marine Corps Systems Command.
- Supported 14 Service-level exercises that deployed detachments of 50-100 Marines and Sailors and millions of dollars of equipment across the West Coast.
- Deployed to Darwin, Australia in 2022. Conducted planning for multiple coalition field exercises and lead a small, mobile command and control team of 10-12 Marines.

NASA Jet Propulsion Laboratory, Mechanical Engineering Intern May 2018 – Aug 2018

Mission: Perseverance Rover - Chassis Subsystem Jan 2017 – July 2017

- Coordinated thermal vacuum bakeout of all Perseverance Rover Chassis components and assemblies, adhering to planetary protection and contamination and control guidelines.
- Performed testing of a deployable mechanism and documented the results under nominal, failure, and environmental conditions.
- Optimized component designs using Unigraphics NX and applied Geometric Dimensioning and Tolerancing ASME Y14.5 to engineering drawings.
- Worked hands-on with an engineer and flight technician to fabricate composite materials for the Rover heat exchangers.

SCHOLARSHIPS & AWARDS

Third Place, Best Engineering Design Award, 2019 ExCEllence in Senior Design Showcase at UT Dallas May 2019

- Placed 3rd out of 14 senior design projects from universities across Texas, Arizona, and New Mexico.

2014 Daniels Scholar, Daniels Fund Scholarship Program Recipient May 2014

- The Daniels Scholarship covers the full cost of attendance for high school seniors who have demonstrated exceptional character, leadership, and a commitment to serving their communities, and who the value of founder Bill Daniels.

PROJECTS

Magnetic Navigation for Unmanned Aerial Systems, Naval Postgraduate School | PI: Dr. Isaac Kaminer

- Using an Extended Kalman Filter with noisy simulated scalar magnetometer data, I evaluated multiple A* cost functions to generate nonintuitive, highly observable magnetic-navigation trajectories, achieving a ~20% reduction in RMSE compared to straight line paths.

PUBLICATIONS

Herrera, T. and D. A. Garren. "3D point cloud generation using interferometric synthetic aperture radar (SAR) for target recognition." Algorithms for Synthetic Aperture Radar Imagery XXXII. Vol. 13456. SPIE, 2025. Available: https://doi.org/10.1117/12.2663642