

I'm determined to accelerate the manufacturing of Starships. My experiences provided me with exceptional qualifications in several fields critical to this effort.

Summary Page:

EDUCATION - *Details on page 3.*

- **Engineering - Masters of Science**
Missouri University of Science & Technology - GPA: 3.5 - 2023
- **Engineering - Bachelors of Science**
Missouri University of Science & Technology - GPA: 3.2 - 2018
- **Aerospace Maintenance - Associates of Applied Science**
Community College of the Air Force - A&P Equivalent - GPA: 4.0 - 2014

EXPERIENCE

- **Engineering (10 years)** - Multidisciplinary experience with electrical, mechanical, and computer engineering. *Details on page 4.*

Engineered electrical brain-computer interface, fluid system modeling, electroencephalograph hardware/software, titanium wire-feed welded cubesat chassis, and various personal build projects.

- **Technician/Mechanic (12 years)** - Air Force Stratotanker Crew Chief Mechanic, pinsetter mechanic, automotive mechanic, etc. *Details on page 5.*

Accustomed to taking extreme ownership in high-stakes work environments.
Proficient at high-speed maintenance, rapid turnaround of crewed missions.

- **Pivotal Life Experience** - Supervisor of homeless shelter, first aid instructor, senior engineering course instructor, etc. *Details on page 2.*

Poised to resolve high-stakes challenges in highly stressful careers.

Balanced simultaneous full-time academics and full-time work for over 10 years.

CURRENT - *Page 2*

- Various engineering, astronomy, and community service projects in Brownsville, TX to contribute to "ignite the curiosity of space exploration" and hone technical skills.
- Reviewing fundamentals of physics, chemistry, engineering (FE reference handbook).

CURRENT & ACCOMPLISHMENTS

CURRENT PROJECTS

- Guiding engineering of hybrid rocket (NO_2 + HTPB) for Brownsville high school team for 10,000 ft altitude attempt. - 2022 to present
- Studying publicly available engineering for the Starship program and Starbase factory development. Worked with Tim Dodd to document Starship OFT.
- Enrolling in welding school to gain practical experience with stainless steel.
- Reviewing fundamentals of physics, chemistry, engineering (FE reference handbook, Feynman Lectures on Physics, Space Mission Engineering SMAD).

PIVOTAL LIFE EXPERIENCE

Worked my way through over 10 years of school working full-time and part-time jobs.

Homeless Shelter Shift Supervisor: 2020 -2022

Poised to resolve high-stakes crisis situations when solo-operating in homeless shelter. Leveraged algorithmic and engineering thinking to optimize resources.

First Aid Battlefield Medicine & CPR Instructor: 2014, 2015, 2016

College Physics Tutor: 2014, 2015, 2016, 2017, 2018

ACCOMPLISHMENTS

1st Place: Missouri University Engineering Design and Build Competition - Developed electrical electroencephalograph hardware and software for a brain-computer interface. 2018

Published 4 papers in engineering applications in neural science - signal processing for brain-computer interface, electrical time series, fluid systems mathematical modeling with differential eq - see Google Scholar - 2020, 2021

President of Rotary International Club - Organized community projects: clothes drive, food drive, 5k for Wounded Warrior Project - 2014, 2015

Created community clean-up projects - 2015, 2016, 2020, 2021, 2022, 2023

Ironman Triathlete - (140.6 Boulder, CO & 70.3 Coeur d'Alene, ID) - 2016, 2018

Air Force Achievement Medal - U.S. Air Force - For actions taken "averting \$633.6 million in catastrophic damages" - 2012

EDUCATION

Computer Engineering - Masters of Science

Missouri University of Science & Technology

Rolla, Missouri — GPA: 3.5 — 8/2018 to 5/2023

Doctoral engineering for funded projects by the DoD using mechanical, electrical, and computer engineering.

Coursework: Mechanical Vibrations, Statistical Data Analysis, Data Mining, Nonlinear Optimization Mathematics, Advanced Computational Intelligence, Clustering, Neural Networks, Artificial Intelligence, Control Systems, Additive Metal Manufacturing Design & Optimization.

Computer Engineering - Bachelors of Science

Missouri University of Science & Technology

Rolla, Missouri — GPA: 3.2 — 8/2014 to 6/2018

Engineering disciplines ranged from aerospace, mechanical, and electrical, to computer architecture and algorithm optimization.

Designed and built electroencephalograph for brain-machine interface.

Coursework: Modern Physics, Electronic Devices, C++, Assembly Code, Discrete Math, Data Structures, Digital Engineering, Computer Architecture, Nanotechnology, Communication Networks, Digital Signal Processing, CAD, FPGAs, Engineering Innovation, Differential Equations, Financial Mathematics.

Aerospace Maintenance - Associates of Applied Science

Community College of the Air Force

Wichita, Kansas — GPA: 4.0 — 8/2011 to 6/2014

Trained in precision inspection, maintenance, and system checkout of all aircraft airframe and powerplant subsystems. Aviation science was applied in high-responsibility situations on international missions and deployment.

Practiced resolving issues in manufactured parts - including installation of mechanical parts, executing aviation system diagnostics, root cause analysis, and implementing standard practices for repair procedures.

Engineering - Diploma

Engineering & Aerospace Science Academy - Evergreen Aviation

McMinnville, Oregon — 2007 to 2010

Engineered and built hovercraft, automatic hydroponic system, pneumatic can crusher, home security system, and trebuchet. Early exposure to aviation, space, and rocketry with the school located in the Evergreen Space Museum.

EXPERIENCE - ENGINEERING

Graduate Engineer (doctoral projects)

Missouri University of Science & Technology

Department of Electrical & Computer Engineering - Computational Intelligence Lab

Department of Mechanical & Aerospace Engineering - Mechatronics Lab

Rolla, Missouri — 8/2018 to 12/2022

In solving engineering challenges, I used a variant of the 5-step process (question, delete, optimize, accelerate, automate). Signal processing, time-series analysis, fluid system modeling with differential equations, and mechanical structures.

Projects

- Developed deposition parameters of 6-axis titanium wire-feed welding robot for cubesat chassis beam structures.
- Used differential equations to model fluid systems for applications in pharmacokinetics and brain injury prognosis.
- Designed pipeline of signal amplification, processing, machine learning, and source reconstruction of electrical activity with Python, MATLAB.
- Engineered mechatronic control systems for quadcopter/cursor control with time series analysis and signal processing of electrical brain data.

Responsibilities

- Instructor for mechanical engineering senior course in systems engineering design. Focus on mechanical, electrical, and high-pressure fluid systems.
 - Technical writing of research publications, documentation, and grants.
 - Software: SPICE (circuits), C++, Python, MATLAB, Verilog, NX, etc
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Additional Engineering

Designed and built Computational Value Theory in economics with Python. 2022

Designed and built an electroencephalograph medical device. Created amplification circuits and signal processing for cursor control brain-machine interface. 2018

Hydrogen, oxygen generator electrolysis hardware. 2019

Startup Engineer and Founder: Designed and built a bio-inspired computing system and managed a team of 12 engineers. 2016, 2017, 2018

Engineered and built operational single-seat hovercraft, automatic hydroponic system, home security system, and pneumatic can crusher. 2008, 2009, 2010

EXPERIENCE - TECHNICIAN

Crew Chief Craftsman Mechanic: KC-135 Stratotanker

U.S. Air Force: Staff Sergeant

McConnell Air Force Base, Wichita, Kansas — 8/2010 to 8/2018

Secret Security Clearance

- Supervised and performed the inspection, troubleshooting, and hands-on maintenance of all aircraft systems. Responsible for signing off on final system checkouts before crewed flights.
- Damage analysis and preventative maintenance servicing.
- Engaged in over 60 temporary duty travel missions CONUS and supported over 150 missions OCONUS and through Middle East combat zone deployment.
- Maintained flawless quality assurance record through 8 years.

Duties and responsibilities - Troubleshoot, inspect, install, replace, rig, or adjust (including, but not limited to):

Mechanical: Panels, sheet metal failure/cracks, corrosion identification, windows, flight control surfaces (ailerons, flaps, speed brakes), horizontal and vertical stabilizer, landing gear assembly, brake assembly, cables/wire rope accessories, rivets, fasteners, bolts, clamps, grommets, screws, gaskets, safety wire, etc.

High-pressure Hydraulic/Pneumatic: cylinders, motors, pumps, snubbers, valves, adapters, fittings, couplers, gauges, hoses, o-rings, etc.

Electrical: 3-phase motors, AC motors, DC motors, linear actuators, engine ignitors, radome, centrifugal blowers/fans, switches, relays, solenoids, indicator lights, all aircraft lighting systems, circuit breakers/fuses, breaker/fuse panels, wiring, and wire harness maintenance, etc.

Service: ~5000 psi pneumatic nitrogen and hydraulic fluid servicing, gaseous aviators breathing oxygen (GOX), F-108 jet engine hydraulic fluid, and engine oil.

Inspection: Inspected aircraft with extreme attention to detail for serviceability, part dimension compliance, corrosion identification, installation errors, flight/mission damage, and manufacturing defects. Aircraft inspection details vary from 30 minutes to 4+ hours (preflight, post-flight, etc) and certified final checkout before crewed flights.