Nolan Groves

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College graduate with lab work, programming, research, and teaching experience. Looking to specialize in autonomous systems. Extensive experience in a ultra-high vacuum research lab with both hardware and software. Participated in research projects including applying machine learning to data. Broad exposure to physics, applied electronics, multiple programming languages, and advanced math.

Education

2017 – 2021 **Bachelors degree in Physics with CS minor**, *Texas State University*, San Marcos, TX, 3.97.

- Applied Electronics
- Independent Research
- Electromagnetic Theory I & II
- Calculus III
- Quantum Mechanics
- Statistical Physics
- Differential Equations
- Assembly Language
- Data Structures & Algorithms

2012 – 2016 **IB Diploma**, *Westwood High School*, Austin, TX, 4.0.

Experience

May 2019 – Current **Lab Tech**, *Texas State University*, San Marcos, TX.

Worked under Dr. Mark Wistey in Molecular Beam Epitaxy (MBE) research. Resolved technical/mechanical issues and assisted with general ultra-high vacuum lab operation. Also worked alongside him doing guided research using machine learning to analyze spectra.

- Modified code to allow digital reading of unsupported sensors through Molly control software, as well as debugging and implementing various other hardware control interfaces.
- Helped design and build water chiller units with digital controls.
- Oversaw transfer of control systems to new hardware and operating systems.
- Preformed general maintenance work and operation on ultra-clean systems, ultra-high vacuum systems, high voltage systems, arsenic contaminated systems, and others.
- Designed and implemented neural networks using TensorFlow to categorize samples based on their spectra.

Aug 2019 – May 2021 **Learning Assistant/Lab Instructor**, *Texas State University*, San Marcos, TX.

Worked with various teachers to teach the intro Electricity and Magnetism course and the Advanced Lab course

- Taught the fundamentals of electronic and mechanical systems using independent projects including a high-vacuum system and an automated weather station
- Learned the pedagogical models backing the Learning Assistant program and modern learning in general
- Staffed the physics help center to assist with a variety of problems from various classes.

Nov 2017 – Current, Intermittently **Contractor**, *Salsa Labs*, Austin, TX.

Preform data normalization, transformation, and cleanup on client data for import into a CRM database

Computer Skills

- Python
- Java
- Linux
- C++
- JavaScript
- TensorFlow

Fabrication Skills

- Welding
- Water Jet
- Wood Shop
- Metal Lathe
- CNC Mill
- Laser Cutter