Nolan Groves

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Graduate student at ASU with lab work, software development, research, and teaching experience. Worked to develop predictive analytics software using machine learning to analyze client data. Extensive experience in a ultra-high vacuum research lab with both hardware and software. Participated in research projects including applying machine learning to predict data. Broad exposure to physics, applied electronics, multiple programming languages, and advanced math.

Education

2023 – Now **Master's degree in Robotics and Autonomous Systems**, *Arizona State University*, Tempe, AZ.

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

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

Experience

June 2022 – June 2023 **Data Analyst**, *Affinaquest*.

Worked to develop software implementing a complete pipeline to operate on client data, from the raw input all the way through to selecting and training machine learning models

- Implemented machine learning algorithms, including XGBoost, Random Forest, and Logistic Regression, within predictive analytics using Python technologies such as scikit-learn, numpy, and pandas.
- Utilized extensive client databases for a classification problem, forecasting potential new donors from historical data
- Developed a comprehensive data pipeline from scratch, integrating Python for data ingestion, cleaning, and feature extraction.
- Streamlined the process for delivering final predictions efficiently, specializing in solving the classification challenge of predicting potential new donors

Sep 2021 – Jun 2022 **Instructor**, *Mathnasium*, Austin, TX.

Helped K-12 math students in a tailored curriculum course and one-on-one tutoring.

May 2019 – May 2021 **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.

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
- Staffed the physics help center to assist with a variety of problems from various classes.

Computer Skills

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