Issac Alvarez

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**Education**

UT San Antonio – **Master of Artificial Intelligence** Expected Dec 2025

*Concentration:* Intelligent and Autonomous Systems

UT San Antonio – **Bachelor of Electrical Engineering** Dec 2023

*Concentration:* Computer Engineering GPA: 3.60

*Certificates:* Computer Programming for Engineers , Artificial Intelligence

**Technical Experience**

**Brain Tumor Classification,** UTSA Oct 2023 – Present

* Successfully collaborated to design a Convolutional Neural Network Model (CNN) by using Tensorflow and Keras to detect and classify brain tumors from MRI images.
* Tuned and analyzed hyper-parameters of the architecture to improve accuracy to 70% and reduce loss to 0.30.
* Continuously analyzing and enhancing the project by applying additional frameworks and conducting in-depth research in deep learning algorithms to further improve the model’s performance and capabilities.

**Biomedical Engineering Payload,** UTSA Aug 2022 – Present

* Managed the UTSA Aeronautics and Rocket Club (ARC) payload team for the Spaceport America Cup rocketry competition, with the focus on developing a scientific payload that tested Microbial Fuel Cells (MFC).
* Utilized Altium Designer to successfully design schematics and PCBs for implementation on the payload, while adhering to necessary cubesat dimensions and mass constraints.
* Maintained accurate records of all engineering documentation related to the project, which included technical drawings, relevant specifications, and reports for judging.
* Led the development of an interorganizational electrical engineering training program with a focus on skills such as Altium design, Microcontroller programming and Power optimization, thus reducing new member training timetable by 50%.

**Computer Vision Surgical Implant Reader,** UTSA Jan 2023 – Dec 2023

* Successfully led a senior design capstone team to develop an innovative software solution to decode structurally encoded implants from medical X-ray imaging.
* Provided technical guidance in the development of product specifications, designs, standards, and test protocols regarding image processing and structural analysis.
* Streamlined the CAD implant model assembly processing by utilizing the Fusion 360 API that reduced existing model assembly timetable by 90%.

**Technical Skills**

**Programming:** Python, C , C++ , MATLAB

**Software:** Altium, Git, Github, LabVIEW, PSPICE, Fusion360

**Libraries/Frameworks:**

*Python:* Fusion 360 API, OpenCV, Tensorflow, Keras, SciPy, pandas, scikit-learn, Matplotlib, seaborn

*MATLAB:* Fuzzy Logic Toolbox, Image Processing Toolbox, Deep Learning Toolbox

**Lab Equipment:** Function Generator, MyDAQ, Oscilloscope, NI ElvisBoard, Soldering (THT & SMD), 3D printing

**Involvement**

Aeronautics and Rocket Club- EE Advisor 2021 - Present