CALEB EHRISMAN

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EDUCATION

South Dakota Mines

M.S. Computer Science and Engineering (Non-thesis) - 4.0 GPA   **Expected May 2024**
  – Received Outstanding Graduate Computer Science and Engineering Student Award

B.S. Computer Engineering   **May 2022**

EXPERIENCE

Desty LLC — *Data Engineer Intern*   **Nov 2023 - Present**
- Writing Python scripts to acquire and populate data for travel destinations
- Automating the transformation, augmentation, filtering, and aggregation of data into usable datasets
- Developing automated triggers to integrate completed and compiled datasets into AWS
- Developing an automated data pipeline to create new datasets in AWS from the web app

Raven Industries — *Software Engineer Intern*   **May 2023 - Aug 2023**
- Expanded a simulation tool to include a module for testing a new product
- Tested and debugged CANBUS to ensure proper functionality of simulation tool
- Debugged I2C communication between onboard Inertial Measurement Unit (IMU) and STM32 Processor
- Identified and documented SPI communication issues with external non-volatile memory
- Communicated daily goals and progress with team in daily stand up meetings

South Dakota DOT Research Office — *Engineering Intern*   **May 20-Aug 20 & May 21-Aug 21**
- Deployed optical sensors, atmospheric sensors, and wireless communications up-links
  to keep SafeTravelUSA site updated with real-time information on the state of South Dakota highways
- Debugged electronic hardware, network software, power systems to repair and restore electronic environment sensing stations
- Prepared new tower structures for installation and deployment

PROJECTS

DSU Data Analytics Competition
Placed 3rd out of 50 teams in a Data Analytics Competition hosted by Dakota State University and sponsored by Sanford Health. The goal of the competition was to create a classifier to identify fraudulent Health ACA claims. The process involved understanding the data domain so we can perform data cleaning, imputation, and feature engineering. We achieved 99.99% accuracy in our preliminary testing and were invited to present in front of other teams and a panel of judges.

VR Walking Techniques
Developing a XR movement toolkit for a cybersickness testing suite under the guidance of Professor Rebenitsch, as part of a faculty-led research initiative. Includes building scalable and reusable methods of both basic and complex movement techniques, integration into an existing framework, creating an Unity editor tool to allow easier use by non-coders, and creating thorough documentation of the implementation.

NASA Space Apps Competition
As a team of 6 members from the Data Science Club, we participated in the NASA Space Apps Competition in taking 3D Spectrometer datasets and video representations to create a new audible experience. Utilizing Meta's Segment Anything Model, MIDI file generator, and our custom method to convert data to musical notes we able to create a new way to experience cosmic videos that is accessible through sound. Our project was globally nominated for finalist contention by a panel of NASA Engineers.

Portal VR
Developed a VR game inspired by Valve's 'Portal', that had a starting 'menu' room with two stages. Utilized Unity, Blender, C# to create in-game models, movement interactions, object interactions, animations, particle effects, and shaders. Implemented design strategies to reduce cyber-sickness. Mapped a custom XR Controller input system to ensure intuitive and responsive VR experience.

INVOLVEMENT

Peer Mentor - Be a source of advice and information for freshmen to ensure a successful first year
Data Science Club Member - Tackling Data Science competitions as a club
Application Development Club Member - Learn and apply technologies used in Software Engineering

SKILLS

Languages: Python, C, C++, C#, Java, HTML, CSS, Scala, Swift, R
Tools: Git, Jira, Confluence, Trello, Visual Studio, Bash, Jupyter Notebooks, Unity
Libraries: OpenCV, Pandas, Scikit-Learn, Matplotlib, Numpy
Machine Learning Frameworks: PyTorch, TensorFlow, Keras, LangChain
Frameworks: Django, Vue.js, Next.js