Erick Verleye
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WORK EXPERIENCE

Software Developer | University of Colorado Boulder, CIRES Earth Lab - Boulder, CO July 2022 - Present

- Engineered a relational database with sqlalchemy which is populated with data from the GitHub web API for storing public engagement metrics for each of Earth Lab's GitHub repositories
- Wrote Python APIs for data retrieval from various NASA EarthData stores as well as AWS S3 buckets for integration into Earth Lab's data analysis projects
- Optimized machine learning inference scripts in Python for Earth Lab's Bridges to Prosperity partnership, bringing image inference runtime on the order of weeks down to only hours
- Technical lead on the development and deployment of the Geospatial Imaging Spectroscopy Processing Environment on the Cloud (imgSPEC) for CIRES' Environment Data Science Innovation and Inclusion Lab (ESIIL)
- Led architecture design sessions for the migration of imgSPEC's data store and cloud computing resources from NASA cyber infrastructure to CyVerse
- Wrote unit tests, documentation, and configuration files in order to make Earth Lab's Climate Futures Toolbox package compliant for publication on the Comprehensive R Archive Network
- Configured runtime environments and wrote executable scripts from Jupyter notebooks and R scripts for running on CU's Research Computing nodes

Software Engineer | Universities Space Research Association - Huntsville, AL   Sep. 2019 - July 2022

- Engineered the ground data pipeline for NASA's IXPE spacecraft, which automatically processes thousands of files daily from the spacecraft into high level data products for the scientific community
- Managed operations of IXPE's pipeline post launch, keeping it fully operational while also verifying data fidelity through scientific analysis tools
- Created a unit testing suite that provides full coverage for all software written for IXPE's pipeline
- Created a public suite of science analysis software tools in Python to aid the scientific community's analysis of IXPE data
- Designed and implemented the relational database using sqlalchemy which is the backbone of IXPE's pipeline
- Engineered a suite of database analysis tools which monitor the health of the pipeline and fidelity of the data
- Managed internal versioned controlled repositories for NASA's IXPE mission with git and interfaced with several partner institutions' repositories
- Engineered internal utility programs that give both high and low level accounts of the health of the pipeline

Cofounder, Lead Application Engineer | Integrated Traffic Systems - Grosse Ile, MI   Jan. 2020 - Present

- Engineered the Plymouth Trains iOS and Android app which was featured on Fox2 Detroit News and in the Detroit Free Press for both iOS and Android
- Designed the Google Firestore database which supports both the iOS and Android version of Plymouth Trains — supporting over 3000 users
- Designed and wrote the application backend in Python, which utilizes machine learning image recognition technology to populate the database used by the application
- Wrote analysis tools in order to create data products for users based on train activity

EDUCATION

Michigan State University | College of Natural Sciences
May 2019
Major: B.S. Physics **Minor:** Computational Modeling
GPA: 3.6

AWARDS

- Awarded a 2022 Marshal Space Flight Center Certificate of Appreciation Honor Award - awarded to an individual in recognition of an outstanding accomplishment that contributed substantially to the mission of MSFC. "For unrelenting and broad support of the Imaging X-ray Polarimetry Explorer Mission by enabling every aspect of the IXPE Science Operations Center."