Sean Lewis

Developer & Scientist

EDUCATION

Ph.D. - Physics
Computational Astrophysics
Drexel University, 2023

Masters - Physics
Drexel University, 2019

Bachelors - Physics
California Polytechnic State University, 2016

SKILLS

Programming

- Python (numpy, pandas, scikit-learn, pytorch)
- SQL/PostgreSQL
- MongoDB
- Fortran90, C/C++
- MPI/OpenMPI

Technical

- Machine Learning
- HPC Systems
- AWS
- Git
- ETL/ELT Pipelines

CONTACTS

sean.phys@gmail.com
(408) 470-0668
slewis.wiki

EXPERIENCE

DATA SCIENTIST
NEAR-MISS MANAGEMENT LLC | Sept 2023 - Aug 2024

- Led the design of robust algorithms for ArcDRA, a flagship machine learning risk management product.
- Eliminated critical data inconsistencies, resulting in a 25% reduction in model processing time.
- Designed novel time series data ETL machine learning pipelines with over 30% increased efficiency.
- Coordinated with a specialized team within an Agile structure to develop scalable cutting-edge machine learning pipelines and object-oriented design in Python.

RESEARCH SCIENTIST
DREXEL UNIVERSITY | Sept 2019 - Sept 2023

- Led the development of high-performance algorithms and low-level modules using FOSS libraries and legacy computational fluid dynamics software.
- Enhanced algorithms with optimized matrix vectorization techniques, reducing computation time by over 10x.
- Managed and acquired supercomputing resources to build custom analysis pipelines and process terabytes of data.
- Mentored an international team of graduate students and led training sessions on data science and machine learning.

PROJECTS & ACHIEVEMENTS

PROJECTS LED

- **ArcDRA:** A flagship time series risk management SaaS product utilizing machine learning libraries (PyTorch) to provide real-time anomaly detection.
- **VorAMR:** A first-of-its-kind Fortran-based module unifying data from magnetohydrodynamic software suites providing unique research insights in astrophysics. Currently used by researchers at the American Museum of Natural History.

RESEARCH & PUBLICATIONS

- First-author publication in The Astrophysical Journal.
- Presented research at the American Astronomical Society conferences in 2019, 2020, 2021, and 2023.
- Secured and managed a National Science Foundation grant as co-PI, supporting cutting-edge computational research.

PROFESSIONAL DEVELOPMENT

- Neural Networks and Deep Learning - DeepLearning.AI
- Bayesian Statistics: From Concept to Data Analysis - UCSC