Sean Lewis, Ph.D.

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)
- SQL/PostgreSQL
- MongoDB
- Fortran90, C/C++
- MPI/OpenMPI

Technical

- Big Data
- Machine Learning
- AI Technologies
- Git
- AWS

CONTACTS

sean.phys@gmail.com

(408) 470-0668

slewis.wiki

EXPERIENCE

DATA SCIENTIST

NEAR-MISS MANAGEMENT LLC | 2023-2024

- Led the design and development of robust algorithms for ArcDRA, a pioneering flagship risk management product.
- Eliminated critical data inconsistencies, resulting in a 25% reduction in model processing time.
- Leveraged MongoDB and PostgreSQL databases to ensure the seamless operations of a global customer base.
- Coordinated with a specialized team to develop scalable data processing methods and cutting-edge machine learning pipelines in Python.

RESEARCH SCIENTIST

DREXEL UNIVERSITY | 2019-2023

- Pioneered the development of high-performance algorithms and low-level modules for legacy computational fluid dynamics software.
- Enhanced algorithms with optimized matrix vectorization techniques, reducing computation time by over 10x.
- Leveraged supercomputing resources to generate and analyze terabytes of hydrodynamic simulation data.
- Mentored junior graduate students and led training sessions on data science and machine learning.

PROJECTS & ACHIEVEMENTS

PROJECTS

- **rhombus:** A generalizable python library for high-performance analysis parallelization with open-source APIs providing efficiency increases of up to 40%.
- **VorAMR:** A first-of-its-kind Fortran-based module unifying data from magnetohydrodynamic software suites.

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