Saumik Dana, dana.spk5@gmail.com, +1-512-986-9638

Summary

Saumik is a U.S. permanent resident and an accomplished computational engineer with a Ph.D. in Engineering Mechanics from UT Austin. In graduate school, he enabled groundbreaking large-grid geoscientific simulations on a supercomputer using Fortran/C/MPI. At a national lab, he developed Python code to accelerate subsurface flow simulations by 3 orders of magnitude. He led the development of a fusion startup's first Python-based stock price predictor, expanding their SaaS offerings to include financial analytics. He is proficient in Bayesian inference, time series analysis, and machine learning.

Skills

- **Programming Languages:** Python, C, C++, Fortran, Matlab
- **Data Science Tools:** PyTorch, scipy, scikit-learn, pandas, statsmodels, seaborn, hyperopt, Jupyter Notebook, vim, gnuplot, boost, eigen, matplotlib, numpy, opencv, SQL, json
- **Software Development:** Git, Conda, AWS, MPI, Azure, Poetry, FastAPI, Flask, asyncio, Qml, PySide6
- **GitHub**: `https://github.com/SaumikDana`
- **Website**: `https://saumikdana.github.io/`

Work Experience

Computational Engineer, VISIE Inc., Austin, TX **Aug 2023-Nov 2023**

- In the lead-up to a **successful oversubscribed Series A funding round**, I engineered a robotic control system for precise movement and scanning, enabling real-time image registration for an orthopedics product demo.
- Streamlined package sub-component releases to Azure Artifacts, enhancing the deployment process.

Computational Lead, Sapientai LLC, Austin, TX **Aug 2022-Mar 2023**

- **Developed the startup's first stock price predictor**, leveraging data-driven discovery processes from their fusion-focused services, **expanding the company's SaaS offerings to include financial analytics**.
- Implemented autoregression and comprehensive cross-validation, enhancing model reliability and predictive accuracy, and facilitated continuous delivery integration using GitHub Actions.

Postdoctoral Associate, University of Southern California, Los Angeles, CA **Nov 2020-July 2022**

- **Developed and implemented large-scale geoscientific simulations on AWS EC2 instances, advancing the lab's computational capabilities**. Introduced a novel Bayesian MCMC approach for parameter estimation, setting new benchmarks in data analysis.

Postdoctoral Associate, Baylor College of Medicine, Houston, TX **Feb 2020-Oct 2020**

- Engineered innovative tools for biologists in forensics, enhancing their analytical workflows significantly.

Postdoctoral Associate, Rensselaer Polytechnic Institute, Troy, NY **Aug 2019-Jan 2020**

- Collaborated with a NYC startup to optimize a vertical axis wind turbine design, achieving a 20% reduction in power loss and enhancing energy efficiency.

Postdoctoral Associate, Los Alamos National Lab, Los Alamos, NM **Jan 2019-July 2019**

- Implemented a reduced order model for subsurface flow, **accelerating simulations by 500-1000 times and enabling real-time decision-making for operators**.

Graduate Intern, Siemens Corporate Technology, Princeton, NJ **June 2018-Sept 2018**

- Developed a tool for simulating temperature evolution in laser-based additive manufacturing, improving process precision and microslice accuracy.

Education

Doctor of Philosophy in Engineering Mechanics, University of Texas at Austin **Aug 2012-Dec 2018**

- **Developed a finite element technique enabling groundbreaking large-grid geoscientific simulations on a supercomputer**. The research culminated in several publications and was instrumental in advancing iterative solution techniques for coupled flow and geomechanics.

Master of Engineering in Mechanical Engineering, Indian Institute of Science **Aug 2009-June 2011**

Bachelor of Engineering in Mechanical Engineering, University of Mumbai, India **Aug 2004-May 2008**