



Summary

Dynamic and results-driven computational engineer and U.S. permanent resident with a Ph.D. in Engineering Mechanics from UT Austin. Spearheaded the development of groundbreaking financial and geoscientific analytic tools, significantly enhancing business offerings and research capabilities. Proven expertise in numerical methods, machine learning, and Bayesian inference, with a track record of delivering innovative solutions that have been instrumental in securing substantial funding and setting research benchmarks.

Skills

- **Programming Languages:** Python, C, C++, Fortran, MATLAB, SQL
- **Software & Tools:** Git, PyTorch, SciPy, Scikit-Learn, Pandas, StatsModels, Seaborn, HyperOpt, Jupyter Notebook, Vim, Gnuplot, Boost, Eigen, Matplotlib, NumPy, OpenCV, MPI, Conda
- **Software Development:** Agile Methodologies, Continuous Integration/Deployment (CI/CD), Flask, FastAPI, Qml, PySide6, HTML, CSS
- **Platforms:** AWS, Azure, Linux, Windows
- **Version Control:** Git (GitHub, GitLab, Bitbucket)
- **Professional Profiles:** GitHub (<https://github.com/SaumikDana>), Personal Website (<https://saumikdana.github.io/>)

Work Experience

Computational Engineer, VISIE Inc., Austin, TX

Aug 2023-Nov 2023

- Pioneered an advanced robotic control system, achieving unprecedented precision in movement and scanning, instrumental in securing key Series A funding.
- Optimized deployment processes by streamlining package sub-component releases to Azure Artifacts.

Computational Lead, Sapientai LLC, Austin, TX

Aug 2022-Mar 2023

- Engineered the company's inaugural stock price predictor, diversifying SaaS offerings into financial analytics and driving business growth.
- Enhanced model reliability and predictive accuracy through comprehensive cross-validation and facilitated CI/CD using GitHub Actions.

Postdoctoral Associate, University of Southern California, Los Angeles, CA

Nov 2020-July 2022

- Revolutionized large-scale geoscientific simulations on AWS EC2, elevating the lab's computational capabilities with innovative Bayesian MCMC approaches.

Postdoctoral Associate, Baylor College of Medicine, Houston, TX

Feb 2020-Oct 2020

- Innovated and deployed forensic biology tools that significantly streamlined genetic analysis processes, boosting analytical efficiency.

Postdoctoral Associate, Rensselaer Polytechnic Institute, Troy, NY

Aug 2019-Jan 2020

- Led a collaborative initiative with a NYC startup to re-engineer a vertical axis wind turbine design, which cut power loss by 20% and increased energy efficiency.

Postdoctoral Associate, Los Alamos National Lab, Los Alamos, NM

Jan 2019-July 2019

- Spearheaded the development of a reduced order model for subsurface flow, catapulting simulation speeds by orders of magnitude and facilitating real-time operational decisions.

Graduate Intern, Siemens Corporate Technology, Princeton, NJ

June 2018-Sept 2018

- Conceived and executed a thermal simulation tool for laser-based additive manufacturing, enhancing process accuracy and component quality.

Education

Doctor of Philosophy in Engineering Mechanics, University of Texas at Austin

Aug 2012-Dec 2018

- Pioneered an algorithm enabling previously unachievable large-grid geoscientific simulations on a supercomputer.
- Published 5+ papers in peer-reviewed journals on iterative solution techniques for coupled flow and geomechanics.
- Presented findings at multiple national labs, engaging with leading experts to foster collaborative efforts.

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