Eric Crisp

Contact Information
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(302) 528-2477

Education

University of Pennsylvania, Philadelphia, PA — Jan 2025 - Dec 2025
M.Sc., Data Science

Pennsylvania State University, State College, PA — Aug 2015 - May 2021
M.Sc., Mechanical Engineering
B.Sc., Aerospace Engineering

Technical Skills

Programming	**Data Science, AI/ML**	**Tools & DevOps**
`Python, C++, MATLAB`	`TensorFlow, PyTorch, Scikit-learn`	`Docker, AWS, CI`
`JavaScript`	`SQL, Spark, Pandas, Numpy`	`Git, React, Node`

Experience

Engineering Systems Analyst III, Real-Time Modeling — Apr 2022 – Nov 2024
Blue Origin, Seattle, WA

- Led a small, multi-disciplined team responsible for all RTM (real-time model) activities across Blue Origin.
- Developed RTMs for use in HIL, test support, controller development, and requirements validation including trade studies and performance optimization.
- Served as RTM project manager from project conception by managing scope, deliverables, and deligation.
- Identified critical software bugs on flight HIL systems via RTM integration, increasing reliability and value.
- Reduced testing manpower requirements by up to 35% with RTM, accelerating development timelines.
- Effectively communicated the value and impact of technical outcomes from RTM to both technical and non-technical steakholders.
- Architected the RTM framework and developed source code, tooling, supporting algorithms and solvers.

Propulsion Development Engineer, Combustion Devices — May 2021 – Apr 2022
Firefly Aerospace, Austin, TX

- Developed an automated thermal-structural design process that reduced engine production costs by 12%.
- Contributed to clean sheet engine design through production, exceeding performance requirements by 4%.
- Conducted root cause investigations of failures and implementated systematic and engineering solutions.
- Enhanced engine test visibility with automated visualizations of the engine state relative to test sequence.

Projects

Fundamental Physics Models from Physics Informed Neural Networks — Aug 2025 – Present

- Investigating the use of neural-symbolic approaches that combine Physics-Informed Neural Networks (PINNs) with symbolic differentiation to dynamically derive optimally simplified representations of governing PDEs.
- Developing PINN architectures and supporting functionality from scratch while selectively leveraging open-source libraries including PyTorch, JAX, and CoolProp.
- Identifying violations of fundamental conservation laws (energy, mass, momentum) to provide insights into model architecture limitations and improve interpretability within scientific computing domains.

Machine Learning Pipeline for Food Classification and Health Scoring — Jun 2025 – Jul 2025

- Built an ML pipeline to classify food items and generate health scores using supervised learning algorithms, with model optimization through GridSearchCV hyperparameter tuning achieving 91% accuracy on test data.
- Implemented comprehensive data preprocessing using Pandas for large-scale dataset manipulation, NLTK for ingredient text processing and nutritional analysis, applied normalization, imputation, and encoding for PCA, and automated visualizations in postprocessing with Seaborn and Matplotlib.

Restaurant Reccomendation System — May 2025 – Jun 2025

- Built a full-stack application using AWS RDS, React, Node.js, SQL, PostgreSQL, and NLTK to create a series of recomendation systems to help users identify restaurants in their location, discover similar options, and receive personalized meal and restaurant suggestions.
- Processed and integrated large-scale datasets containing millions of records (text and images) into a PostgreSQL database on AWS RDS, implementing optimized SQL queries and RESTful APIs to serve real-time recommendations to users.

Awards and Activities

Blue Origin Engines Challenge Award — Jul 2022
Awarded for technical successes in developing the real-time modeling capabilities at Blue Origin.