Nils-Erik B. Rundquist

Software • Data • Physics

(760) 412 7002 • Nils.Rundquist@edf-re.com
NilsRundquist.com

Professional Experience

EDF Power Solutions North America   San Diego, CA

Senior Data Solutions Engineer   September 2025 - Present

Engineer enterprise-level data solutions and lead technical innovation across Engineering, Procurement, Construction, and Technical Services departments. Design and implement scalable cloud-native platforms supporting real-time pricing analytics, competitive intelligence systems, and strategic decision support for Grid-Scale Power portfolio. Drive cross-functional initiatives to standardize data practices and break down silos between Development, Engineering, Strategic Procurement, and Project Management teams. Lead development of advanced statistical models and simulation tools for cost estimation, risk quantification, and market analysis. Establish self-service analytics frameworks and automated reporting systems using Python ecosystem, distributed computing frameworks, and modern DevOps practices.

Data Solutions Engineer   August 2024 - September 2025

Developed proprietary software solutions and data infrastructure for utility-scale renewable energy projects. Built predictive models for cost estimation and risk assessment across Solar PV and Energy Storage projects. Designed data visualization frameworks using Python and SQL to support cross-functional decision-making.

Senior Data Analyst   March 2023 - August 2024

Conducted data analysis for cost estimation of grid-scale solar power plant EPC projects. Maintained and improved internal software packages and analytics processes.

UCSD Center for Astrophysics and Space Sciences
Optical Infrared Laboratory   La Jolla, CA

Software Engineer   January 2022 - March 2023

Developed and managed software packages for instrumental performance modeling and instrument data reduction pipelines. Designed and programmed web hosted GUIs with simulation software for several astronomy instruments to inform scientific inquiry and estimate optical performance. Created and managed automated scripts for the generation and analysis of large scientific datasets. Worked in collaboration with an international adaptive optics and instrument design team, generated figures to illustrate system sensitivities and scientific viability. Authored scientific result papers, analyzed and presented data results to inform instrumental performance and design.

Research Associate   April 2018 - January 2022

Astrophysics researcher for the development of physics simulation software for various first-light optical and infrared astronomy instruments. Designed and implemented simulations for photometric error analysis and end-to-end science cases, managed software development and documentation, and designed and deployed public online exposure time simulation software package. Performed perfunctory laboratory management tasks.

Lab Assistant   April 2017 - March 2018

Lab assistant and student researcher for the development of physics simulation software.

Outback Adventures   La Jolla, CA

Wilderness Guide   January 2014 – March 2018

Lead guide for a variety of wilderness trips including backpacking, kayaking, canoeing, and climbing expeditions.

Administrative Assistant   January 2015 – September 2017

Managed office responsibilities associated with Outback Adventure's outings program.

Challenge Course Facilitator   June 2015 – October 2017

Facilitated and supervised large numbers of participants on UCSD's high-ropes challenge course.

Climbing Gym Coordinator   September 2016–June 2017

Managed safety of climbing gym members and instructed patrons on rock climbing and belaying techniques.

Other work experience includes case-by-case technical support, volunteer work, and other clerical occupations.

Education

B.S. in Physics with Specialization Astrophysics **Graduated 2017**
University of California, San Diego

Software Proficiencies

- Python (pandas, numpy, pydantic, fastapi, streamlit), SQL, C++, C, HTML
- Database: Google BigQuery, SQL Server, SQLAlchemy, Alembic, SQLModel
- Data Visualization: Tableau, Power BI
- Cloud & DevOps: Docker, Kubernetes, GitHub Actions, CI/CD
- Operating Systems: Linux, Windows, macOS
- Version Control: Git
- Statistical Analysis: Monte Carlo simulation, predictive modeling
- API Development: FastAPI, Streamlit, Flask
- Microsoft Office Suite

Skills and Certifications

- Data architecture and system design
- Cross-functional team leadership
- Technical and scientific writing
- Agile development methodologies
- Independent research and problem solving
- Project risk assessment
- Data integration and workflow optimization