LARS OSTERVOLD

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SUMMARY

Highly analytical and results-driven Data Scientist, adept at leveraging Python and SQL to extract actionable insights and develop compelling data visualizations. Proven ability to translate complex datasets into clear, concise reports, as demonstrated by designing and deploying data-driven solutions that improved efficiency and informed strategic decision-making. Possesses a strong foundation in data analysis, statistical modeling, and data visualization, with experience in machine learning, deep learning, and cloud technologies. Passionate about communicating findings and collaborating with stakeholders to drive impactful outcomes. Extensive experience developing Python-based data solutions and creating impactful visualizations, as well as building and deploying AI-powered chatbots, showcases his skills and abilities.

TECHNICAL SKILLS

Programming & Scripting: Python (6+ years), SQL, R, JavaScript (Node.js, TypeScript), Bash, Linux, FORTRAN

Data Analysis & Visualization: Pandas, NumPy, SciPy, Matplotlib, Seaborn, Data Visualization, Data Wrangling, ETL

Machine Learning & Deep Learning: TensorFlow, PyTorch, scikit-learn, Neural Networks (CNNs, RNNs), model training/tuning, production deployment

Cloud & DevOps: GCP, Azure, AWS, Docker, CI/CD pipelines

TECHNICAL EXPERIENCE

Senior Data Scientist | The Dow Chemical Company | April 2023–Present

- Developed and deployed deep learning models (TensorFlow, PyTorch) for molecule discovery, *reducing search time by 87%* and contributing to a patented innovation.
- Built and productionized AI-powered compliance chatbots (Python, Streamlit, OpenAI APIs), *reducing lookup times by 10+ hours per review*.
- Designed and deployed a $40MM NPV machine learning-driven customer web app (R Shiny, Python) with backend services deployed via Docker on Azure, *supporting 400+ users*.
- Leveraged Python and data visualization tools to present complex datasets and facilitate data-driven decision-making.
- Utilized cloud platforms to optimize data analysis processes, *improving efficiency by 25%*.
- Recognized as top 5% of internal developers, *earning Dow's 'Champion' Coder certification*.

Chief Technology Officer | LION Software | May 2024–March 2025

- Spearheaded the development and deployment of a scalable data visualization and analytics platform, ensuring high performance and reliability for 100+ users.
- Optimized complex graph network algorithms, *reducing computational complexity from $O(n^2)$ to $O(n \log n)$* to support real-time data insights.
- Architected and developed the complete technology stack using Next.js for a client-side rendered application, ensuring data security by processing all data locally within the user's browser.

Ph.D. Researcher | The Pennsylvania State University | January 2021–March 2023

- Designed and automated high-performance computing (HPC) simulations, boosting reaction yields by 288% while reducing manual run time by over 340%.
- Developed Python algorithms for instrument data preprocessing, cleaning, transformation, and report generation—saving 3 hours per run and enhancing data reliability for experimental workflows.

PROJECTS

Retail Analytics Dashboard (Repo, Dashboard)

- Developed an interactive retail analytics dashboard with advanced forecasting, product analysis, customer segmentation, and market insights using Python, XGBoost, TensorFlow, and Streamlit.
- Applied unsupervised learning algorithms such as clustering (e.g., K-Means) and dimensionality reduction (Autoencoders) to segment customers based on purchasing patterns and identify key customer groups (e.g., high-value).

Baptized Technology (Repo, Website)

- Designed and deployed scalable full-stack (Next.js) AI chatbots using a Retrieval-Augmented Generation (RAG) stack and cloud-based NLP solutions, handling 600+ monthly queries.
- Implemented a complete user authentication and data storage system utilizing PostgreSQL through Supabase, including third-party authentication integration for secure user management.

AI Travel Blog (Repo, Website)

- Engineered a fully automated content creation infrastructure for a travel blog, leveraging AWS Lambda functions and scheduled cron jobs for autonomous operation.
- Developed a Next.js frontend and a Python backend deployed with Docker containers on AWS to manage content generation and website updates.

BibleProject Chatbot (Repo, Website)

- Developed a Retrieval-Augmented Generation (RAG) chatbot leveraging Google Cloud Platform APIs to answer user questions about the Bible and the story of Jesus, providing relevant information from BibleProject resources.
- Built with a Next.js frontend and Python backend, demonstrating proficiency in full-stack development within the GCP ecosystem.

EDUCATION

Ph.D., Chemical Engineering (with focus on Machine Learning & Computational Modeling) | The Pennsylvania State University | 2023, GPA: 4.00

M.S., Chemical Engineering | University of Arkansas | 2020 GPA: 3.98

B.S., Chemical Engineering | University of Oklahoma | 2018 GPA: 3.85

Continued Education : Machine Learning Certification (Coursera, 2025), Deep Learning Certification (Coursera, 2025), Data Structures and Algorithms Certification (Packt, 2025)