Mohsen Dehghani

Canadien Citizen
Transforming AI and Data Science into Competitive Advantages

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Portfolio: Deep Learning Page — GitHub — LinkedIn

Professional Summary

Accomplished Data Scientist and Machine Learning Developer with over 5 years of experience designing and deploying AI models to solve complex business challenges. Expertise in deep learning, computer vision, and natural language processing (NLP), with a proven track record of improving model accuracy and operational efficiency. Proficient in deploying scalable AI solutions using Kubernetes, Docker, and cloud platforms to enhance business performance.

Key Skills

- **Machine Learning Libraries & Frameworks**: Scikit-Learn, XGBoost, TensorFlow, PyTorch, Transformers, Pandas, NumPy.
- **Cloud and DevOps**: Kubernetes, Docker, Azure, AWS, and Streamlit for scalable deployments.
- **Data Science**: Statistical modeling, time-series forecasting, anomaly detection, and data pipelines (SQL, MySQL).
- **Visualization Tools**: Matplotlib, Seaborn, Plotly.
- **Statistical Analysis**: Proficient in SciPy, Statsmodels, PyMC3.
- **Programming Languages**: Python, R, SQL.

Professional Experience

Data Science Specialist
Employment and Social Development Canada (ESDC) **May 2024 – Dec 2024**

- Enhanced OCR systems using CTC and LSTM models, increasing text extraction accuracy by 15%.
- Collaborated with cross-functional teams to streamline data pipelines and improve operational efficiency by 10%.
- Leveraged Kubernetes for scaling model deployments across Azure cloud infrastructure.
- Developed distributed training pipelines using **Kubeflow** on Kubernetes, reducing training time by 40%.

Data Science and Machine Learning Consultant
ScalAI **Jan 2024 – Mar 2024**

- Enhanced OCR accuracy through reinforcement learning (RLHF), leading to significant system improvements.
- Completed 350 high-priority chatbot optimization tasks, boosting operational efficiency by 30%.

Data Science Specialist
Nordikeau - Montreal **May 2023 – DEC 2023**

- Designed time-series forecasting models, improving predictive accuracy by 25%.
- Built and deployed scalable ML pipelines using Kubernetes and Docker.
- Automated reporting processes with Streamlit dashboards, reducing manual efforts by 20%.

Machine Learning Researcher
Mila - Quebec AI Institute **Sep 2022 – Sep 2023**

- Conducted research in deep learning and optimization, developing scalable AI models.
- Presented findings at leading AI conferences and mentored junior researchers.
- Deployed ML models on Kubernetes clusters, improving training and inference efficiency.

Data Scientist
KamNic Inc - Montreal **Oct 2017 – Sep 2022**

- Enhanced ETL pipelines by optimizing Python and SQL scripts, reducing processing time by 35% and improving data reliability for analysis.
- Conducted advanced statistical analysis and predictive modeling, delivering data-driven recommendations that improved operational efficiency by 20
- Spearheaded a team of developers to implement Kubernetes for scalable and efficient resource management, accelerating machine learning model deployment cycles.
- Integrated advanced data analytics tools, including Python and Power BI, to create intuitive dashboards, enabling better decision-making across departments.

Researcher in Applied Mathematics and Operations Research
École Polytechnique Montréal **Oct 2013 – Sep 2017**

- Developed and implemented a high-performance LSQ (Least Squares) solver, enhancing computational efficiency for solving optimization problems in engineering applications.
- Published a peer-reviewed paper detailing the LSQ model's novel methodology and its applications in solving large-scale least squares problems.
- Developed and published a solver for large-scale least squares (LSQ) problems, improving computation efficiency and accuracy for optimization tasks.
- Designed mathematical models leveraging Python and MATLAB to optimize computational workflows, achieving a 20% efficiency increase.
- Conducted advanced mathematical modeling and algorithm development, contributing to research in numerical optimization and operational analysis.

Education

Master's in Machine Learning, Mila - Quebec AI Institute, University of Montreal **2022 – 2024**
Master's in Applied Science, École Polytechnique Montreal **2010 – 2013**
Bachelor's in Mathematics, Shiraz University, Iran **2000 – 2004**

Awards and Achievements

- Mitacs Award (2022 – 2023)
- NSERC Award (2010 – 2013)

Publications

- Dehghani, M. (2019). "A Regularized Interior-Point Method for Constrained Linear Least Squares." [Link to Paper]

Volunteer Experience

Technical Mentor
Various Organizations **2010 – Present**

- Provided mentorship in Python programming and AI development for non-profits and students.
- Organized workshops to promote education and software accessibility.