

# Erfan Khalaji

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## PROFESSIONAL SUMMARY

Senior Data Scientist with 6+ years of experience leading advanced descriptive, diagnostic, and predictive analytics to support strategic and operational decision-making. Proven expertise in statistical modeling, machine learning, and large-scale data analysis across the full data lifecycle. Highly skilled in Python, cloud-based analytics platforms (AWS, GCP), and production deployment of predictive models. Strong communicator with a track record of translating complex data into clear, actionable insights for technical and non-technical stakeholders.

## CORE SKILLS

- **Data Science & Analytics:** Predictive modeling, statistical analysis, feature engineering, hypothesis testing, exploratory data analysis (EDA), model validation
- **Machine Learning:** Supervised & unsupervised learning, regression, classification, NLP, model optimization, production ML
- **Programming:** Python, SQL (advanced), R (working knowledge)
- **Data Platforms & Cloud:** AWS (S3, EC2), GCP, data pipelines, large-scale datasets
- **Visualization & Storytelling:** Data visualization, executive reporting, translating insights for business stakeholders
- **MLOps & Deployment:** MLflow, Docker, CI/CD, monitoring, model versioning

## EXPERIENCE

### AI & Data Scientist

Croptimistic Technology, Edmonton, Canada | Apr 2024 – Present

- Led advanced predictive analytics and machine learning initiatives supporting data-driven decision-making in precision agriculture
- Designed and deployed production-grade predictive models processing 50M+ records monthly and supporting 288K+ daily inferences
- Conducted diagnostic and predictive analyses to identify patterns, trends, and optimization opportunities across large, complex datasets
- Partnered with cross-functional stakeholders to translate analytical findings into actionable operational and strategic insights
- Implemented scalable analytics pipelines and model lifecycle management using Python, AWS/GCP, Docker, and MLflow
- Documented methodologies, assumptions, validation, and testing to support model governance and knowledge reuse

### Machine Learning Scientist

Alberta Machine Intelligence Institute, Edmonton, Canada | Sep 2023 – Apr 2024

- Led predictive modeling and statistical analysis initiatives to support forecasting and operational planning
- Developed end-to-end analytical pipelines from problem definition through model deployment and evaluation
- Applied feature engineering and advanced regression techniques, achieving 87%  $R^2$  and RMSE of 3.56
- Collaborated with data engineers and business stakeholders to ensure analytics solutions aligned with decision-making needs
- Communicated complex model results and assumptions to non-technical audiences

### Machine Learning Researcher

Department of Radiology, UofA Hospital, Edmonton, Canada | Jan 2023 – Sep 2023

- Applied statistical and machine learning techniques to analyze large-scale medical imaging datasets
- Developed and validated predictive computer vision models to support clinical research and data-driven insights
- Collaborated with clinicians and researchers to translate analytical outputs into meaningful clinical interpretations
- Contributed to data curation, quality assessment, and documentation supporting reproducible analytics workflows