

Reza Shahsahebi

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SUMMARY

Data scientist with 6 years of ownership across experimentation, causal inference, ML, and AI systems. Built randomized studies with 1,232 participants and multi-agent LLM applications over real data. Strong fit for roles needing statistical rigor, applied ML, analytics engineering, and stakeholder-facing explanation.

TECHNICAL SKILLS

- **Statistics, ML & Causal Methods:** Python, SQL, scikit-learn, TensorFlow, logistic/OLS/Poisson regression, A/B testing, causal inference, instrumental variables, difference-in-differences, hypothesis testing, cross-validation, feature engineering, experimental design.
- **Agentic AI & LLMs:** OpenAI Agents SDK, CrewAI, LangChain, Pydantic structured outputs, multi-agent orchestration, RAG, hybrid FAISS + BM25 retrieval, MMR, cross-encoder reranking, metadata filters, LLM routing, prompt engineering, RAG evaluation.
- **Engineering & Research Infrastructure:** Gradio, oTree, Prolific, Heroku/Railway deployment, Git, Gurobi, LaTeX, R, Excel, ArcGIS.
- **OR & Decision Science:** optimization, simulation, forecasting, queuing, decision analysis, routing (TSP/VRP), facility location, Bayesian decision modeling, rational inattention, analytical modeling.

PROFESSIONAL EXPERIENCE

Doctoral Researcher

2020 - 2026

Haskayne School of Business, University of Calgary

Calgary, AB

- Designed and ran two randomized behavioral experiments (N=604 and N=628) simulating end-to-end ML hiring-model pipelines under fairness and accountability interventions.
- Built the full experimental stack in oTree, Heroku, and Prolific; analyzed outcomes with logistic regression, Wald chi-square tests, and exploratory text analysis.
- Found fairness-norm messaging nearly doubled the odds of submitting the fairest model (OR about 2.0), translating causal results into product and governance implications.
- Showed high accuracy targets increased the odds of submitting the least fair model (OR up to 1.71), clarifying tradeoffs between performance goals and fairness.
- Developed a Bayesian + rational-inattention model of human-AI decision-making; proved threshold conditions linking AI transparency, accuracy, and demographic fairness.

Instructor

2023 - 2025

Haskayne School of Business, University of Calgary

Calgary, AB

- Taught 250+ undergraduates across 5 sections of Business Analytics and Logistics Management, earning 5/5 most recent term and 7/7 earlier terms.
- Translated optimization, simulation, forecasting, queuing, and decision analysis into applied decision frameworks for nontechnical audiences.

PROJECTS

Dude: Natural-Language Budgeting Agent (OpenAI Agents SDK, FastAPI, PostgreSQL, React)

github.com/mohamadreza3a/dude

- Built a 3-agent system translating plain-English budgeting questions into structured retrieval and analytics over real transaction data.
- Deployed the app for daily use; migrated from a mock-data prototype to a live database with strict guardrails on write operations.

CrewAnalyst: Multi-Agent Data Analysis Pipeline (CrewAI, Pydantic)

github.com/mohamadreza3a/crewAnalyst

- Built a 7-agent pipeline converting uploaded CSV files into markdown and PDF reports with descriptive statistics, anomaly flags, correlation insights, charts, and an executive narrative.
- Added parallel async execution for 3 independent analytics agents, Pydantic-typed handoff schemas, and model-tier routing for cost-latency tradeoffs.

RagTeX: LaTeX-Aware RAG System (FAISS, RAG, Gradio)

github.com/mohamadreza3a/ragtex

- Built a RAG pipeline over academic papers with section-aware chunking, local FAISS embeddings, metadata filters, query routing, and a dedicated LaTeX parser.

NLP-Based Crypto Direction Prediction (word2vec, LSTM, sentiment analysis)

MSc project

- Predicted next-day direction for Bitcoin, Ethereum, and Litecoin from Twitter sentiment and news headlines; collected about 320K tweets and news from 41 outlets.
- Compared VADER/TextBlob with word2vec + LSTM, reaching 79% sentiment-classification accuracy and 64.2% Bitcoin direction-prediction accuracy.

EDUCATION

PhD, Operations and Supply Chain Management

2020 - 2026

Haskayne School of Business, University of Calgary

Calgary, AB

MSc, Industrial Engineering

2018 - 2020

Sharif University of Technology

Tehran, Iran

BSc, Industrial Engineering

2014 - 2018

Kharazmi University

Tehran, Iran

AWARDS & SERVICE

- Paramount Resources Ltd Graduate Scholarship in Business, University of Calgary, 2024 and 2025.
- Runner-up, Outstanding Achievement in Teaching Award, University of Calgary, 2025.
- Treasurer and Board Member, Alberta Student Chapter of the Canadian Operational Research Society, 2024 - 2025; Session Chair, CORS Annual Conference, 2024.