Reza Shahsahebi

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SUMMARY

Operations and behavioral researcher with applied ML and engineering chops. I design and run large randomized experiments, develop formal models of human-AI decision-making, and ship multi-agent LLM applications end-to-end. Looking to apply rigorous causal, analytical, and engineering skills to real-world data and product decisions.

EDUCATION

University of Calgary, Haskayne School of Business 2020 – 2026 (expected)
Ph.D. in Operations and Supply Chain Management *Calgary, AB*

- Dissertation: *Toward Fair AI Systems: Programmer Practices, Human-Machine Bias, and Trust Dynamics*.
- Advisors: Osman Alp, Justin Weinhardt, Alireza Sabouri.

Sharif University of Technology 2018 – 2020
M.Sc. in Industrial Engineering *Tehran, Iran*

- Thesis: Predicted next-day market direction from Twitter and news-headline sentiment. Designed a credibility-filtered influencer identification step, engineered sentiment features, and trained scikit-learn classifiers plus a TensorFlow feedforward neural network. Lifted binary-classification accuracy from 51% (chance) to 67%.

Kharazmi University 2014 – 2018
B.Sc. in Industrial Engineering *Tehran, Iran*

TECHNICAL SKILLS

- **Languages & Tools:** Python, R, SQL, LaTeX, Git, Excel (advanced modeling), ArcGIS.
- **ML & Statistics:** scikit-learn, TensorFlow, logistic / OLS / Poisson regression, causal inference (A/B testing, instrumental variables, difference-in-differences), hypothesis testing, experimental design, cross-validation, feature engineering.
- **Agentic AI & LLMs:** OpenAI Agents SDK, CrewAI, Pydantic structured outputs, multi-agent orchestration with typed schema contracts. Familiar with LangChain and MCP.
- **Engineering & Research Infrastructure:** FastAPI, PostgreSQL, React, Gradio, Heroku, `uv`, oTree, Prolific.

RESEARCH & APPLIED PROJECTS

Shaping Programmer Practices: Mitigating Bias in ML Development *Reject & Resubmit, POM Journal*

- Designed and ran two randomized behavioral experiments (N=604 and N=628; 1,232 participants total) simulating an end-to-end ML hiring-model pipeline under varied fairness and accountability interventions.
- Built the full experimental stack: interface in oTree, deployment on Heroku, recruitment via Prolific, analysis with logistic regression, Wald χ^2 tests, and exploratory text analysis.

- Found fairness-norm messaging nearly doubled the odds of submitting the fairest model (OR≈2.0); high accuracy targets raised the odds of submitting the *least* fair model (OR up to 1.71); the combined norm + accountability intervention showed a negative interaction (OR=0.43), revealing non-additive effects with direct governance implications.

Collaborative Fairness: Human and Machine Interaction *Working Paper – MSOM / CORS / AIMOR 2025*

- Developed a formal Bayesian + rational-inattention model of human-AI decision-making; proved threshold conditions under which disclosing group-specific AI error rates improves both aggregate accuracy and demographic fairness.
- Identified a non-obvious failure mode in which awareness can *reverse* disparity direction under specific parameter regions, showing why aggregate accuracy audits can mask group-level harm.

AutoAnalyst – Multi-Agent Data Analysis Assistant (CrewAI, Python)
github.com/mohamadre3a/crewAnalyst

- Architected a 7-agent pipeline (profiler, statistician, anomaly, correlation, viz, synthesizer, reporter) that converts an uploaded CSV into a polished HTML analysis report with summary statistics, anomalies, correlations, charts, and an executive narrative.
- Engineered parallel async execution (`asyncio.gather`) for 3 independent analytics agents, Pydantic-typed schema contracts between agents as explicit handoff interfaces, and model-tier routing (Haiku for structural tasks, Sonnet for reasoning) for cost-latency tradeoffs.

Dude – Natural-Language Agent for Budgeting App (OpenAI Agents SDK)
github.com/mohamadre3a/dude

- Built a 3-agent system (conversational, retrieval, analyst) that translates plain-English budgeting questions into structured retrieval plus analytics over transaction data.
- Deployed into a FastAPI / PostgreSQL / React app in daily production use, integrated via Claude Code from an isolated mock-data prototype to the live database.

TEACHING & LEADERSHIP

Instructor, Haskayne School of Business, University of Calgary 2023 – 2025
MGST 391 Business Analytics (4 sections) & SCMA 455 Logistics Management (1 section) *Calgary, AB*

- Independently taught 250+ undergraduates across 5 sections. Student ratings: 5/5 most recent and 7/7 earlier terms. Runner-up, Outstanding Achievement in Teaching Award (2025).
- Translated the technical OR toolkit (optimization, simulation, forecasting, queuing, decision analysis) into applied managerial decision frameworks; designed 12 hands-on logistics activities spanning routing, facility location, and transportation planning.
- Designed *Morning Dash*, an interactive TSP/VRP classroom competition that turned abstract heuristics and computational-complexity concepts into a live, incentivized experience for students.
- Served as translational bridge across a three-advisor committee spanning Operations Management and Organizational Behavior, reconciling quantitative modeling and behavioral-science perspectives to produce two papers at the intersection of both disciplines.

AWARDS & SERVICE

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