Eugene Furman, Ph.D., ML Solutions Architect

Grand Management Advisors Inc.		Phone:	(416)432-1595
Cloud Architecture | ML Systems | Financial Analytics		Email:	eugene.furman@gmadvisors.ca
3230 Yonge Street 4089, Toronto, ON M4N3P6		URL:	https://gmadvisors.ca/about-eugene/

Highlights

Architect of scalable, end-to-end ML systems on AWS, combining deep expertise in stochastic modeling and machine learning with production cloud engineering. Experienced designing and delivering analytics platforms that integrate quantitative methods with modern infrastructure, from data ingestion through model serving. Hands-on with core AWS services including S3, Lambda, RDS, Step Functions, and AgentCore, with applied experience in GenAI architectures including RAG pipelines, prompt engineering, and model evaluation. Background in agile delivery and stakeholder communication, translating complex system designs into production-ready solutions. Experienced in Financial Model Validation and cloud security.

Summary of Skills

- **Computing**: Statistical Modeling, Optimization, Cloud-Native Architecture (AWS, Docker)
- **Development**: Python, JavaScript, SQL, MATLAB, Mathematica, LaTeX
- **Data Engineering & AI**: ETL/ELT, Pandas, PyTorch, AWS Bedrock, SageMaker, and workflow orchestration
- **Professional Certification**: AWS Partner: Technical Accredited, AWS Certified Cloud Practitioner, AWS Certified Solutions Architect – Associate

Employment History

September 2024 - present: **Founder & Product Lead** Grand Management Advisors Inc.

- Lead a growing analytics and product venture startup, developing InvestLens, a cloud-native platform for investment analytics, portfolio optimization, and AI-assisted forecasting.
- Design AWS-native analytics and AI solutions spanning application back ends, data flows, workflow orchestration, and auditable decision-support tooling.
- Deliver advanced financial modeling, stochastic simulations, and scenario automation tools.
- Architect and implement full-stack solutions using Python, JavaScript, SQL, and AWS services.
- Oversee product roadmap, client engagement, and integration of state-of-the-art machine learning models.
- Oversee cloud security policies and conduct IT audit.

September 2022 - present: **Visiting Professor,** Decision Sciences, American University of Greece.

September 2021 - August 2022: **Postdoctoral Researcher,** The Department of Mechanical and Industrial Engineering, University of Toronto in collaboration with Huawei Canada.

November 2020 - September 2021: **Postdoctoral Researcher,** Operations Management, Rotman School of Management in collaboration with Ontario Health.

April 2014 - August 2014: Financial model Validation, Analyst, Sun Life Financial Canada.
Risk classification and audit of financial models operated throughout the organization.

Education

2020: Ph.D. in Operations Management, Schulich School of Business at York University.

2015: M.A. in Mathematics and Statistics, York University.

2014: M.A. in Political Science: International Security and Refugees, York University.

2006: B.Sc., Specialist Diploma (M.Sc.) in Applied Mathematics & Computer Science, in collaboration with Moscow State University, Transnistrian State University.

Projects

2025 - present: Developed InvestLens, a cloud-native platform for constructing, evaluating, and managing portfolios of publicly traded assets that features a dashboard-based UX using Flask, Jinja, Plotly (JS). Shipped LLM/GenAI capabilities (prompting + RAG + evaluation) into a production workflow; iterated based on user feedback and performance. Built as a full-stack AWS-native application using RDS, S3, AgentCore, SageMaker, Bedrock, and related services, with a Python-based back end and modern JavaScript front end. Designed decision-support tooling emphasizing auditability,

risk-aware reporting, and traceable model outputs (trust/safety-aligned). Defined the technical roadmap for incorporating agentic AI into the platform, including RDS-aware portfolio assistants and orchestration patterns enabling AI components to invoke existing Flask routes securely. Defined evaluation protocols and metrics for ML/LLM features (offline benchmarks, A/B testing where applicable, error analysis).

2025: Served as Principal Consultant for an enterprise-grade VoIP PBX platform. Produced a comprehensive report, evaluating the service's differentiators and positioning in the global VoIP market. Advised the client on strategic development pathways to strengthen market presence and product offering. Analyzed experimental and observational datasets to evaluate model and product changes; produced decision-ready reporting for stakeholders. Explored opportunities for integrating the VoIP service with WebRTC solutions to enable browser-based softphone functionality. Improved retention for enterprise-tier clients, contributing to $150,000 ARR retained.

2024 - present: Developed a Spreadsheet Automation and Scenario Management Tool for extracting data from multiple Excel spreadsheets and generating reports in a dashboard-ready format (in Python). The tool supports an arbitrary number of scenarios within a spreadsheet-based model by dynamically collecting user inputs and injecting them into the appropriate spreadsheet cells. It includes version control features and enables flexible, automated report construction.

2022 - present: Effective Routing Policies to Process MRI Backlog of Patients in Ontario prior to and as a result of the COVID-19 Pandemic. Joint work with Dr. Opher Baron, Dr. Andre Cire, and Dr. Adam Diamant.

Applied optimal control theory to derive a dynamic, state-dependent patient assignment policy for MRI machines in Ontario, minimizing costs associated with accumulating patient priority levels while meeting diagnostic requirements. Implemented in **MatLab R2023a**.

2021 - present: *Optimal Capacity Allocation for Clouds with Parallel Processing and Batch Arrivals.* In partnership with Huawei Canada; joint work with Dr. Christopher Beck, Dr. Shane Bergsma, and Dr. Arik Senderovich.

Designed a stochastic demand forecasting framework for cloud capacity allocation across FaaS and IaaS regimes, supporting heterogeneous SLA requirements and multi-resource job scheduling. Developed and validated the model against production datasets using **Python**, **R**, and **MatLab**.

Refereed Journal Publications

Optimal Capacity Planning for Cloud Service Providers with Periodic, Time-Varying Demand
Eugene Furman, Adam Diamant
European Journal of Operational Research (2024)
· Design of a novel voluntary admission control policy where the provider regulates access to the system during periods of high congestion by informing customers as to when they should make a retrial attempt. Using non-linear optimization methods, I determined optimal capacity and retrial intervals for a cloud service. I implemented this approach in **MatLab R2020a** and evaluated its performance using a high resolution dataset.

Customer Acquisition and Retention: A Fluid Approach For Staffing
Eugene Furman, Adam Diamant, Murat Kristal
Production and Operations Management (2021)
· Winner of the 7th Canadian Operational Research Society (CORS) Student Paper Competition in Queueing
This work links capacity planning to service quality, which I define as the ability of a customer to get timely access to resources when requested. Whereas new customers represent a source of time-dependent demand, returning customers may periodically choose to re-enter service. This paper models a common service setting and it applies to a variety of industries including emergency department in a hospital.

Prediction of personal protective equipment use in hospitals during COVID-19
Eugene Furman, Alex Cressman, Alexey Kuznetsov, Saeha Shin, Fahad Razak, Amol Verma, Adam Diamant
Health Care Management Science (2021)
· Special Issue: Management Science in the Fight Against Covid-19 Design of a data-driven framework that employs unsupervised learning techniques to predict the amount of Personal Protective Equipment (PPE) required over a prespecified time horizon using **R** and **Python**.

Academic Appointments

2026 - present: Artificial Intelligence Fundamentals, MMAI, Schulich School of Business.

2023 - present: Business Decisions with Data and Models, Online MBA, Alba Graduate Business School.