

DAWIT L. GULTA

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PROFESSIONAL SUMMARY

Results-driven Data Scientist and Analytics professional with 5+ years of experience transforming complex healthcare and operational data into actionable insights. Expertise in machine learning, statistical analysis, ETL pipeline development, and data visualization. Published researcher with Master's in Information Systems and Technology with contributions across clinical prediction modeling (36% improvement in fracture risk accuracy), post-surgical activity recommendations, and optimization algorithms. Strong communicator skilled at presenting technical findings to clinical leaders, stakeholders, and senior management.

EDUCATION & CERTIFICATIONS

Master of Information Systems and Technology | York University, Toronto (June 2025)

- Dean's Award for Research Excellence

Bachelor of Art in Management Information Systems | Unity University, Ethiopia (2009)

Certifications: Big Data & Data Analytics (York, 2023) | Data Science (Waterloo, 2022) | N2 Clinical Research Excellence (2024) | TCPS 2 Research Ethics (2024)

TECHNICAL SKILLS

Programming & Statistical Analysis: Python (pandas, scikit-learn, scipy, matplotlib, Jupyter), R, SQL (Oracle, SQL Server, PostgreSQL, MySQL), statistical effect size computation (Cohen's d), JavaScript, TypeScript, Node.js, Express.js

Machine Learning & Modeling: Regression, classification, clustering, time-series forecasting, ensemble methods, memetic algorithms, deep learning, pattern recognition, NLP, predictive modeling, optimization algorithms

Web Development & Frontend: React, TypeScript, JavaScript, HTML, CSS, responsive UI design, PWA (Progressive Web App) development

Data Visualization & BI: Tableau, Power BI, advanced Excel (pivot tables, Power Query)

Cloud & Infrastructure: Microsoft Azure concepts, AWS fundamentals, Git/GitHub

Data Engineering: ETL workflows, automated pipelines, data quality validation, dimensional modeling, metadata management

Healthcare Systems: Electronic health records (EHR/EPIC), enterprise data warehouses, clinical databases

Methodologies: Agile development, hypothesis testing, A/B testing, statistical validation, TCPS 2 compliance, privacy protocols

PROFESSIONAL EXPERIENCE

Research Data Analyst | Sunnybrook Research Institute, Toronto

May 2024 – July 2025

- **Fracture Risk Prediction Project:** Developed machine learning pipeline predicting vertebral fracture risk, achieving 36% improvement in outcome prediction accuracy over baseline methods. Results published in IEEE CIBCB 2025 (peer-reviewed).
- **Data Pipeline & Automation:** Created and maintained automated ETL workflows using Python and SQL, reducing manual data processing effort by 60% and enabling scalable analysis of large healthcare datasets.
- **Clinical Analytics & Dashboards:** Built interactive Power BI and Tableau dashboards integrating diverse healthcare data sources (EHR, administrative datasets, clinical databases) providing actionable insights for clinical leaders, program directors, and research teams tracking 650+ patients/recipients.
- **Statistical Validation & Governance:** Evaluated and validated predictive models using appropriate statistical metrics (sensitivity, specificity, accuracy, AUC-ROC). Implemented data governance protocols ensuring TCPS 2 compliance and enterprise data quality standards.
- **Stakeholder Collaboration:** Worked closely with physicians, clinical researchers, and healthcare administrators to translate complex analyses into evidence-based recommendations and decision-support tools.

IT Support & AI Consultant | ACCN, Toronto

October 2025 – Present

- Supporting IT infrastructure and AI implementation initiatives across community care operations.
- Consulting on AI and data analytics strategy for organizational optimization.

Teaching Assistant | York University, Toronto

September 2023 – May 2025

- **Curriculum Development & Instruction:** Trained 100+ students per semester in Python, R, SQL, statistical analysis, machine learning algorithms, and data visualization techniques.
- **Mentorship & Guidance:** Provided technical mentorship on data science projects and capstone work, demonstrating strong communication skills with diverse audiences.

Information Systems Analyst | KBEK Construction, Ethiopia

August 2017 – December 2019

- Designed and implemented SQL Server databases and automated ETL pipelines processing operational data from multiple sources.
- Built executive dashboards and KPI scorecards for project portfolio management and resource optimization.
- Implemented data quality controls and validation procedures ensuring accuracy and integrity of analytical solutions.

Market Coordinator & Data Analyst | Feed Scarborough, Toronto

September 2020 – December 2021

- Improved program effectiveness 30% through data-driven performance measurement and analytics.
- Produced visualizations and BI reports optimizing resource allocation for 650+ program recipients.
- Standardized data definitions and collaborated with partners for consistent performance tracking.

Healthcare Data Analyst | MCM Medical Center, Ethiopia

January 2009 – August 2009

- Analyzed healthcare data from hospital systems and developed data-driven reports supporting executive planning.
- Managed clinical databases ensuring data security and compliance with healthcare standards.

RESEARCH PUBLICATIONS & PROJECTS

Peer-Reviewed Publications

1. **Gulta, D.**, Klein, G., Ross, T., et al. (2025). "Machine Learning for Vertebral Fracture Risk Prediction in Older Adults: A Prospective Cohort Study." *IEEE CIBCB 2025* (Accepted) - Demonstrated 36% improvement in predictive accuracy using ensemble machine learning methods.
2. **Gulta, D.** and Chen, S. (2024). "Improvements to Dual Annealing Optimization Algorithm and Memetic Algorithm Implementation in SciPy." *IEEE Latin American Conference on*

Computational Intelligence (LA-CCI), pp. 1-6 - Enhanced optimization algorithms for complex computational problems.

3. Shah, A., Whyne, C., Kiss, A., Kreder, H., **Gulta, D.**, et al. (2025). "Safe Activity Participation Following Total Hip Replacement: Evidence-Based Recommendations." *British Journal of Sports Medicine*, 59(9), 676-682.

Umoja Robotics Team (2023 – Present)

- **Scouting Application (Web App):** Designed and built full-stack web application using React (TypeScript/JavaScript frontend), Node.js/Express backend, with real-time data collection and visualization for FRC robotics competition analysis. Features include live match scouting forms, data export/sharing capabilities, and progressive web app (PWA) functionality. Deployed on Vercel. Enables real-time performance analytics supporting 50+ team members across scouting operations.
- **Learning Management System (LMS):** Developing educational platform for robotics curriculum delivery and student progress tracking.
- **AI & STEM Program:** Leading data analytics and AI education initiatives for marginalized high school students, integrating machine learning fundamentals with robotics applications.
- **Data Collection & Analysis:** Lead systematic data collection, validation, and analysis for robotics competitions and team performance optimization.

CRM Optimization Project

- Analyzing and optimizing customer relationship management processes and data workflows.

COMMUNITY ENGAGEMENT & LEADERSHIP

Robotics Team Mentor & Program Lead | Umoja Robotics Team, Scarborough 2023 – Present

Mentor marginalized high school students in coding, data analysis, and AI/STEM education. Demonstrate commitment to community development and evidence-based education. Lead technical projects including LMS development, scouting application design, and AI curriculum development for Scarborough community.

Languages: English (fluent), Amharic (native)

Additional Strengths: Strong interpersonal and stakeholder management skills, independent problem-solver, detail-oriented, familiar with OHSA, political acuity in complex environments.