Amy Bell

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Hi, I'm Amy! I've always been drawn to the why behind the numbers – what's causing a trend, what's driving a result, and what we can do about it. As a data professional, I love the challenge of turning messy datasets into actionable insights, whether through machine learning, statistical modeling, or thoughtful analysis. My work is fueled by the excitement of solving complex problems and helping teams make smart, data-driven decisions.

Skills

Technical: Data Modeling, ETL Development & Design, Machine Learning, Predictive Modeling, Regression Analysis, Clustering, Statistical Testing, Web Scraping, Git

Programming Languages: C#, Java, Python, R, SAS, SQL

Software – BI & Visualization: Tableau, Microsoft Excel, Power BI, QuickSight

Cloud Platforms: AWS (Redshift, Datanet, Gluon), Azure, Google Cloud

Work Experience

Amazon   11/2024 – 01/2026
Business Intelligence Engineer

AI & Analytics

- **AI Evaluation Dataset:** Developed gold-standard Q&A evaluation dataset using statistical tests, regression models, and clustering analysis, enabling objective benchmarking of AI agent performance against verified answers allowing visibility into agent improvement over time
- **AI Knowledge Base Design:** Designed knowledge base blueprint for agentic AI product by working backwards from BIE requirements and documenting data sources, providing the science team with an actionable development roadmap
- **Metric Analysis:** Delivered rapid analysis using logistic regression and odds ratios to quantify the relationship between customer service experience and transfer rates, informing urgent data requirements for an agentic AI product demo

Data Engineering & Pipelines

- **Product Suppression System:** Engineered dynamic high return rate suppression system replacing hard-coded configurations, enabling product managers to independently control which marketplaces remove Amazon listings that exceed return rate thresholds – reducing update time from 3+ days to immediate and saving ~8 hours of BIE effort per change
- **Defect Ticket Prioritization:** Resolved prioritization failures by investigating 8 interconnected SQL pipeline profiles, implementing fixes to ensure critical defect detections received proper ranking – accelerating removal of defective products from Amazon's storefront and saving thousands in concessions/returns
- **Contact Transcript Pipelines:** Sourced data from Gluon, implemented deduplication logic, and loaded cleaned datasets to Redshift – unlocking customer interaction data that revealed key drivers of dissatisfaction allowing stakeholders to take action

Reporting & Dashboards

- **Defect Attribution System:** Built end-to-end defect attribution reporting system – designed data model, ETL pipeline, and QuickSight dashboards that replaced biweekly deep-dive requests to my BIE team, saving ~12 hours per month through self-service analytics that let PMs investigate defect detection performance independently
- **Reporting Infrastructure:** Drove continuous improvement of reporting infrastructure by identifying and resolving data quality issues, fixing pipeline bugs, and iterating on dashboards based on stakeholder feedback

Canadian Tire Financial Services   **11/2022 − 10/2024**
Data Scientist – Sports Analytics

- **Podium Probability Models:** Redesigned Monte Carlo simulation framework to incorporate Bayesian-derived Glicko ratings, yielding a 10% improvement in podium prediction accuracy
- **Automated Data Collection:** Developed custom web scrapers in Python (Selenium, BeautifulSoup) to build original sports results datasets from scratch – providing the critical data foundation that made building numerous predictive models possible
- **Talent Identification:** Developed predictive ML models using gradient boosted trees to help Swimming Canada identify junior athletes with future senior medal potential
- **Competition Forecasting:** Used regression splines in SAS to predict winning swimming times across all disciplines, achieving predictions within 1.5% of actual results at the 2023 World Championships
- **Coaching Dashboards:** Collaborated with various National Sports Organizations to create Tableau dashboards that enhanced coaching strategies and competition insight
- **Podium Pathways:** Built linear and logistic regression models that benchmarked Canadian athletes against decades of medalist data, giving NSOs an objective tool to assess medal potential and guide funding decisions

Data Scientist – Provisional Modelling

- **ECL Model Maintenance:** Updated and debugged the Expected Credit Loss model (ECL) in SAS and created monthly financial ECL reports vital for banking operations
- **Report Automation:** Replaced manual Excel reporting workflows with automated Tableau dashboards, recovering ∼8 hours per analyst per month and reducing the risk of human error in monthly financial reports

Archmillhouse Inc   **01/2022 − 11/2022**
SQL Database Developer

- **Materials Automation:**Developed a C# program to automate engineering materials listing creation, working around ERP system limitations that forced engineers into a tedious 3-hour manual process – reducing it to minutes and saving ∼12 hours of engineering time monthly
- **Sales Forecasting:** Built a dashboard using advanced SQL queries to predict workload peaks and enable strategic hiring, reducing late shipments by 15%
- **Inventory Tracking:** Created an inventory age dashboard to track item longevity, promoting use of older stock to minimize waste and reduce costs

Education

BSc – Mathematics and Statistics Co-op   **09/2017 − 04/2022**
McMaster University • Hamilton, ON, CA

Current Projects

Personal site development using Hugo
Current reading: *Causal Inference for The Brave and True*, Matheus Facure Alves

Misc. Achievements

Road & Track Cycling
4x Canadian National Champion • 12x National Medals • 13x Ontario Provincial Champion • 24x Provincial Medals

Other Stuff
24 mountains summited • 1 powerlifting competition won • 100% Stardew Valley completion