Michael Chen

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Education

Master of Data Analytics Expected 08/2026
Western University, London, Canada
- Relevant Coursework: Artificial Intelligence, Reinforcement Learning, Databases, Machine Learning Foundations

HBSc in Mathematics & Computer Science 09/2020 – 09/2024
University of Toronto, St. George Campus, Toronto, Canada
- Relevant Coursework: Neural Networks, Image Understanding, Data Analysis, Mathematical Modeling

Skills

- **Programming Languages:** Python, Java, SQL, JavaScript/TypeScript, VBA, R
- **Libraries & Frameworks:** PyTorch, PySpark, Hugging Face, LangChain, Scikit-learn, OpenCV, NumPy, SciPy, Pandas
- **AI/ML:** CNNs, Transformers, LLMs, RAG, Prompt Engineering, Vector Databases
- **Tools & Platforms**: Docker, Git, Power BI, Excel, Claude Code, Azure

Experience

Independent Data Analyst & Developer | *Trading Card Business, Toronto, Canada* 01/2022 – Present
- Designed and deployed an automated trading card grading system using Python and OpenCV (homography transformation, Canny edge detection), achieving 90% grading accuracy and reducing evaluation time by 70%.
- Built an end-to-end inventory and sales tracking pipeline with real-time web scraping , cutting manual data entry by 90% and enabled data-driven sales decisions through real-time sales notifications, improving responsiveness and revenue opportunities.
- Applied predictive analytics and computer vision techniques to card valuation, boosting profit margins by 200% and minimizing low-grade submissions.

AI-Powered Sales Advisor | *Golf Town, Burnaby, Canada* 01/2025 – 07/2025
- Developed and deployed a Retrieval-Augmented Generation chatbot using LangChain, Hugging Face Transformers, and FAISS vector database, integrating real-time web scraping to deliver context and inventory aware equipment recommendations, which improved decision making efficiency and reduced reliance on manual searches.
- Analyzed ball-flight and customer fitting data using statistical methods and integrated insights into the RAG pipeline, enhancing recommendation accuracy and customer satisfaction.
- Enhanced sales decision-making by combining structured fitting data with LLM-based reasoning, reducing advisor bias and increasing customer-equipment compatibility.

Projects

Students Performance Predictor| *R* 06/2024
- Built and deployed a multiple linear regression model to predict student performance, achieving 95
- Conducted data preprocessing and feature engineering in R, including imputation of missing values, outlier treatment, normalization, feature selection with ANOVA and BIC, while performing multicollinearity diagnostics (VIF) to ensure feature independence and model reliability.

Piano Melody Generator|*PyTorch* 12/2023
- Led a 4-member team, coordinating weekly Zoom meetings, assigning tasks, and fostering clear communication to ensure alignment, collaboration, and on-time project delivery.
- Designed and implemented 1–3 layer LSTM/GRU sequence models for MIDI-based melody generation, performing feature engineering, hyperparameter tuning, and model evaluation, and identified a 2-layer LSTM as the optimal architecture, achieving the highest listener rating (6.78/10).

Predictive Analytics with Hybrid ML model | *PyTorch* 08/2023
- Designed a hybrid predictive model combining Item Response Theory with neural networks; applied PCA for feature selection and tuned hyper-parameters.
- Improved prediction accuracy by 30% compared to baseline ML models.

CERTIFICATIONS & AWARDS

Microsoft Certified: Azure Fundamentals (AZ-900) 09/2024
- Certification ID: 1100115363

University of Toronto Entrance Scholarship 09/2020
- Awarded for outstanding academic achievements upon admission.