Aristo Surjadhana

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Skills

- **Languages**: **Python**, **R**, **SQL,** ARM, C#, HTML/CSS, Java, Javascript, Latex, Prolog, Racket, VBA
- **Frameworks & API:** Jupyter, Keras, Matplotlib, Numpy, Pandas, Pytorch, Scikit-learn, Tensorflow, nflfastR

Education

Waterloo, ON **Wilfrid Laurier University** **September 2019 – April 2026**

- Honors Bachelor of Computer Science

Work Experience

Data Analyst
Icon Office Environments **September 2024 - August 2025**

- Improved forecast accuracy by over **60%** (reducing error from **~50% to 17-20%**) across 100+ products and various sell types, enabling more accurate demand planning and inventory optimization; Built using Python (XGBoost, Sarima, Prophet, Scikit-learn, statsmodels, Holt-Winters Model)
- Automated the forecasting pipeline in a Linux environment and integrated dynamic Excel dashboard, reducing purchasing time from **2 hours** to **1 hour** each month and cutting overall decision time by **65%** and reducing projected purchasing costs by **$360,000** a year.
- **Visualized** sales data trends using **Looker Studio**, uncovering high performing product categories and improving inventory planning decisions.

Technical Experience

ODS-MAS (Offensive-Defensive Strategy Multi-Agent System)
Python, FastAPI, n8n, Groq **September 2025 - November 202**

- Architected a real-time tactical decision support system using **n8n** to orchestrate four specialized LLM agents (Play-by-Play, Scouting, Tactics, Supervisor).
- Developed a custom ASR (Automatic Speech Recognition) microservice using **FastAPI** and **Faster-Whisper** to transcribe live coaching voice commands into structured game-state JSON.
- Engineered the "Tactics Agent" to optimize play calls by minimizing **Expected Pass Completion Probability (PCP)**, applying **Centralized Training with Decentralized Execution** principles to ensure coordinated agent outputs.

Game Specific Image Classifier
Python, Pytorch/Tensorflow,
OpenCV, CNNs

- Developed a computer vision pipeline using **Transfer Learning (ResNet18)** to classify video game environments from raw image data, achieving high validation accuracy through iterative fine-tuning.
- Engineered a custom Data Augmentation strategy using RandomResizedCrop, RandomHorizontalFlip, and ColorJitter to increase model generalization and robustness against varying resolutions.
- Optimized training performance using Learning Rate Schedulers (StepLR) and Cross-Entropy loss functions, monitoring convergence to prevent overfitting on specialized datasets.

Player Engagement Model
Python, XGBoost, LightGBM, SHAP **July 2024 - August 2024**

- Engineered a two-stage machine learning pipeline (Classification & Regression) to forecast user playtime across **113,000+ games**, effectively modeling skewed/imbalanced data (zero-inflated).
- Synthesized disparate datasets by fuzzy-matching Steam metrics with ESRB content ratings to quantify the impact of specific themes on user retention.
- Optimized model performance using Optuna and deployed SHAP analysis to isolate key engagement drivers, identifying that social features (Co-op) outweighed content themes.