

Jay Nelson-Sellers

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EDUCATION

University of Washington Bothell

Bothell, Washington, USA

Bachelor of Science in Computer Science and Software Engineering, GPA: 3.4/4

Sep 2020 – June 2024

- Relevant Coursework: Machine Learning, Deep Learning, Computer Systems Architecture, Real-Time Embedded Systems, Big Data, High-Performance Machine Learning, Robot Perception, Object-Oriented Programming

PROJECTS

Brain Tumor Segmentation Pipeline with U-Net and GCP | GitHub

Feb 2021 – May 2021

- Developed an automated brain tumor segmentation pipeline (369 MRI cases) using TensorFlow, N4 Bias Correction, Slicing, and Augmentation; deployed on GCP Vertex AI for real-time inference
- Achieved multi-class segmentation accuracy (Dice: 0.83, IoU: 0.76) via U-Net training.
- implemented AWS S3 for storing datasets, reducing data access time by 26%
- Enhanced model robustness through iterative refinement using TensorBoard, EarlyStopping, and checkpointing; exported model to ONNX for cross-platform compatibility

Scalable Stock Price Forecasting with Feature Engineering and Deployment | GitHub Jan 2024 – Ongoing

- Constructed a PySpark pipeline reducing data preparation time by 84% on the 1.3GB JPX dataset; deployed the model on AWS Lambda for automated daily forecasts
- Developed an LSTM (PyTorch) and ARIMA forecasting model with AutoRegressive and Spline Regression features, resulting in a 45% better Sharpe Ratio; standardized deployment using ONNX

End-to-End Image Classification with ResNet and Triton Deployment | GitHub

Jan 2024 – Apr 2024

- Developed and trained a ResNet9 CNN in PyTorch for CIFAR-10, implementing data augmentation (crop, flip, rotation, and jitter) to achieve 94% validation accuracy
- Generated 15+ visualizations (loss curves, confusion matrix, model graph) using Matplotlib/Seaborn/Torchviz; integrated with GCP Storage and benchmarked on Triton Inference Server

EXPERIENCE

Undergraduate Research Assistant | University of Washington Bothell

Jan 2024 – June 2024

- Developed a machine learning system to train AI models on multi-dimensional data.
- Researched and implemented IGTD: a novel method for data engineering to apply convolutional networks to tabular data.
- Created front-end dashboards to visualize research results.
- Demonstrated data analytics and public speaking by presenting research during the University Colloquium.

E-Commerce IT Operations & Systems Management | Wayne's 45s

Jun 2024 – Ongoing

- Administered and maintain business-critical systems including Shopify integrated e-commerce platforms, and backend databases to ensure 99.9% uptime for sales operations.
- Lead IT project management for system upgrades and infrastructure deployments, coordinating task delegation and vendor communication to streamline logistics.
- Utilized PowerShell and data analytics to automate inventory reporting and monitor store metrics, increasing user engagement by 200% through technical optimization.
- Managed high-value procurement and secure asset documentation for transactions exceeding \$250,000, ensuring strict adherence to detail-oriented reporting standards.

TECHNICAL SKILLS

Languages: Python, C/C++, SQL, Bash/Shell, PowerShell Scripting

Systems & Administration: Microsoft 365 (Entra ID, Exchange, Teams, Intune), VOIP (Teams Calling), Windows/Linux Server & Desktop OS

DevOps & Tools: Git, Linux/Unix, Docker, IT Ticketing Systems (Trello/Asana), Device Management Platforms

Databases & Cloud: Microsoft Azure, MySQL, MongoDB, GCP (Compute Engine, Cloud Functions, Vertex AI), AWS (EC2, S3, Lambda)