Michael Baylard

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Work Experience

John Deere Chicago, IL, USA
ISG A&A FurrowVision – Intelligent Solutions Group – Data Scientist 2024 - Present

- Curated and annotated a novel field image dataset by designing end-to-end workflows: collected raw sensor and camera images, implemented data-cleaning pipelines, and established annotation guidelines, resulting in a 10,000-image labeled corpus.
- Designed and implemented relational database schemas and extraction pipelines to convert SuperAnnotate's NoSQL document-based annotations into present and historical relational tables, enabling efficient consumption by CVML models.
- Co-developed PyTorch-based computer vision models to detect agronomic features in unseen field images; achieved 92% accuracy on validation set and maximized inference time through fine-tuned GPU batching.
- Orchestrated SuperAnnotate human-in-the-loop validation by optimizing labeling processes through autonomous keypoint placement and refined tagging instructions, reducing per-image annotation from over 25 seconds to 6 seconds—a 76% improvement—cutting total annotation time by 80%.
- Optimized PySpark data pipeline to process 92M+ image and metadata records, reducing runtime from 8 hours to 1 hour—an 87.5% improvement—through optimized parallel computing and containerized workflows.

Speaksense Chicago, IL, USA
Founder & Full-Stack Data Scientist 2023 - Present

- Full-Stack Development: Next.js/React frontend with streaming chat via Vercel AI SDK (<2s responses) and Pusher.
- Developed and optimized data pipelines for batch and parallel ingestion of YouTube metrics into PostgreSQL, resulting in a 90% increase in data processing speed and enabling the analysis of 1 million new records weekly.
- LLM & Tool-Calling: GPT-4.1 API chat with Zod-validated, LLM-built SQL tool-calling (~$1/1K queries) for precise, personalized analytics.
- Visualization: D3.js & Tremor charts with custom tooltips; time-series analysis of views, CTR, engagement.
- Deployment & CI/CD: Dockerized services, GitHub Actions, Vercel & GCP serverless hosting.

John Deere Chicago, IL, USA
DA&CS – Data Aftermarket & Customer Sales – Data Engineer 2023 - 2024

- Designed and deployed machine-specific Aftermarket Recommendations pipelines using PySpark, filtering 500K+ machine records for US/CA and global markets; aligned pipelines with coding standards and best practices to enable scalable data delivery to eCommerce and PoPS systems.
- Engineered PowerGard and JDProtect inspection eligibility pipelines by collaborating with Lifecycle Services to categorize 654K machines based on age and usage metrics, enabling targeted maintenance and warranty recommendations that contributed to $107K in dealer reimbursements.
- Earned recognition as a Power BI "Power-User" with two badges of thanks; provided proactive support in Power BI Doctor sessions and guided practitioners enterprise-wide to resolve complex reporting issues.
- Developed and delivered analytics solutions that contributed over $52M in revenue across precision, warranty, and aftermarket segments.

John Deere Chicago, IL, USA
JDF – John Deere Financial – BI Analyst 2022 - 2023

- Engineered and optimized Power BI reporting solutions by converting scheduled queries to native Databricks queries via Power BI's Databricks API connector; reduced report refresh times from 5–10 minutes to 20 seconds and decreased storage usage by eliminating stored tables.
- Developed JDF operational analytics dashboards (Mid-Market and Credit Lens) by automating data ingestion from source systems, replacing manual downloads with daily refreshed Power BI reports; showcased deliverables at JDF Retail Credit leadership meetings.

Education

Bradley University 2022
B.S. Computer Science | Computer Science - Data Science & Cybersecurity | GPA: 3.62

Certifications

President's Award 2023
John Deere
Enterprise Aftermarket Data and Analytics

Microsoft Certified: Power BI Data Analyst Associate 2023
Microsoft | ID: 36CB648123A0EFEC