Blake Hamm

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Experience

PHDATA Remote

Senior Machine Learning Engineer and Solution Architect September 2024 – Present

- Led pod on implementation of agentic AI Tutor collaborating with cross functional teams to design and scope technical product roadmap and procure fastAPI backend to unlock new revenue opportunity
- Collaborate with internal engineering, DevOps, product and subject matter experts (SME) to drive AI/ML strategy and architecture at Stride
- Design and implement latency-reducing strategies in AI applications including semantic model routing, prompt and context reduction and eval-driven model selection to reduce latency by over 50% in AI tutor application
- Implement GenAI infrastructure to support text summarization application that improve tutor efficiencies and provide next step recommendations for students optimized with python DSPy GEPA
- Spearhead Redis database implementation for AI tutor to ensure low latency context retrieval by creating RAG framework leveraging Cohere embedding models and chat memory system
- Procure LLMOps for GenAI apps with CI/CD in Terraform, NewRelic monitoring and alerting, MLflow tracing and EKS autoscaling validated with python Locust load testing
- Manage scaling and FinOps for AWS Bedrock AI growth including provisioning throughput and LLM eval, routing and selection to reduce costs by 20% while ensuring high availability of foundation models
- Build AI application which leverages GCP Vertex AI and python Streamlit to track user mental health and provide daily affirmations, habit tracking and vision board, leveraging DSPy, Llamaindex and pgvector

FIDELITY INVESTMENTS Hybrid

Senior AI/ML Engineer (Platform) October 2023 – September 2024

- Enhanced core chatbot ML infrastructure and models, transitioning legacy NLP techniques to state-of-the-art LLMs, improving accuracy and user engagement
- Revamped MLOps processes in a legacy environment, implementing automated retraining and validation, resulting in 50% faster delivery times for mission-critical, customer-facing chat applications
- Spearheaded enterprise-wide initiatives, modernizing CI/CD processes with Jenkins and transitioning ML infrastructure to AWS Sagemaker, resulting in improvement in governance, monitoring, and observability
- Owned and enhanced a mission-critical multiclass-classification model (Python scikit-learn), replacing a vendor model and implementing data validation, automated retraining, API deployment, and reducing model iteration time from over 2 weeks to a single day while saving the company significant costs
- Led team to win the prestigious Regional Culture Code Hackathon with an innovative analytics chat app, utilizing Azure OpenAI, Retrieval-Augmented Generation (RAG) techniques, and Python Streamlit for real-time data insights and interactive user experience
- Champion Python utility package to reduce duplicated code across projects and provide more robust testing coverage and SLA's while also recommended python best practices with linting, testing and CI/CD

CAPITAL ONE Remote

Principal Machine Learning Engineer December 2022 – October 2023

- Developed and deployed a benchmarking process and Python library for a proprietary change point detection algorithm, improving model interpretability and establishing market best-in-class standards
- Invent and patent a novel training approach for RL algorithms, achieving a 30x increase in speed, enhanced performance, and greater customization capabilities, significantly improving customer experience
- Expanded Python testing suite and governance for proprietary RCA algorithm, enhancing robustness and accelerating development cycles
- Provided critical support for customer use cases on Python MLAAS utility, maintaining on-call availability and contributing to the enterprise platform

METLIFE LEGAL PLANS Remote

Data Science Manager (Player-Coach Role) October 2021 – November 2022

- Mentored and guided team on dbt, data modeling, and data engineering best practices, fostering an innovative data team culture through book clubs, GitHub PR reviews, and training sessions, resulting in a 30% increase in team productivity
- Led the migration of AWS Glue jobs to Dask on Prefect (EKS cluster), cutting extract-load compute costs by 80% and reducing job times by 4 hours, enhancing efficiency and cost-effectiveness
- Implemented CI/CD pipelines for Airbyte, Prefect, Redshift, dbt, and re_data using Terraform, eksctl, and GitHub Actions, streamlining deployment processes and improving operational reliability
- Implement strategy to scale by investing in data engineering and data modeling and transition business logic from tableau to dbt (170+ models and 500+ tests) using dimensional modeling techniques
- Implement data quality and anomaly detection framework (re_data) to better understand and track outliers
- Refactor PHP legacy reporting application for Account Managers (AMs) into dynamic Python Dash app (distributed to over 20 AMs); align messaging with marketing team

FREELANCE DATA SCIENCE CONSULTANT Remote

Self Employed May 2017 – October 2021

- Spearheaded full-cycle data science projects—from statistical design and EDA to machine learning model deployment (including NLP, time series forecasting, Bayesian and ensemble methods)—to deliver actionable insights
- Managed diverse projects and nurtured client relationships, achieving up to an 80% increase in satisfaction and successful, on-time delivery of customized solutions
- Applied advanced analytics and time series forecasting techniques to optimize supply chain and demand planning processes, reducing errors and improving inventory strategies
- Engineered robust data pipelines and automation tools (leveraging Python, SQL, and ETL frameworks like Airflow) to streamline data collection, reporting, and decision-making
- Spearhead integration of innovative business intelligence solutions, enhancing product lifecycle analysis and overall operational efficiency

AMER SPORTS, Salomon Remote

Demand Planner Feb 2021 – October 2021

- Collaborate with key business stakeholders to improve demand planning processes in a Big Data environment, managing over 1000 sku's, introducing visualizations and analytics into the demand planning process
- Implement data mining techniques (random forest) on high dimensional sales data to understand product feature importance and reduce dimensionality
- Leverage python sklearn tools to implement an ensemble, multivariate time series forecast with data pre-processing/decomposition improving MAPE from 200% to 80% as a baseline
- Apply a time-dependent Chain Ratio Methodology to break out a model-level forecast to various product and customer attributes which integrated product lifecycle and cannibalization
- Pioneer the business intelligence team's implementation of SAP Analytics Cloud to communicate and visualize supply risks/opportunities and demand plan with colleagues

SAFILO, Smith Optics Remote

Demand Planning Analyst June 2020 – Feb 2021

- Collaborate with key business stakeholders to develop and own global demand, supply and production plan for Smith Optics Sunglasses
- Modernize the operation planning reporting process by scaling KPI reporting through automated scripts
- Replace excel workbooks with Executive Information System (EIS) that contained product life cycle and trend analysis using time series statistical decomposition and implementing a regression model to identify stages in the product lifecycle (R shiny)
- Manage independent contractor, IT and database (PICK) developers to build a standalone MySQL database that consolidates sales and operations planning (S&OP) data
- Validate data and collaborate to build best practices to address discrepancies, while establishing an ETL pipeline to maintain and update master data
- Develop a software with R shiny to forecast demand at model and SKU level using univariate forecasting and implementing seasonal decomposition at various product hierarchy levels

- Built automated and dynamic demand driven material resource planning (DDMRP) in R shiny that received raw material supply inputs, demand plan and capacity weights to allow for scenario modeling (raw material ETA changes, capacity planning smoothing weight and varying demand situations); using nonlinear optimization

Education and Certificates

AWS Machine Learning - Specialty Dec 2024
AWS Solutions Architect - Associate April 2023

WESTMINSTER COLLEGE Salt Lake City, UT
BS Economics, Mathematics Minor Sep 2013 - May 2017

Skills

AI/ML Engineering: Agent design, Retrieval Augmented Generation (RAG), AutoML, Ensemble Modeling, Feature Engineering
MLOps: Model Governance - Validation, Versioning, Benchmarking and Registry, Feature Toggling and AB testing, Automating Endpoint Training/Testing/Deployment (Sagemaker, mlFlow, Kubeflow), CI/CD (Jenkins, Ansible, Terraform, Argo Workflows/Events), GitOps (ArgoCD), monitoring (prometheus, grafana, loki, splunk, Datadog, NewRelic)
Data Science: Natural Language Processing (NLP), Time Series Forecasting, Root Cause Analysis (RCA), Regression Trees/Boosting, Exploratory Data Analysis (EDA)
Data Engineering: Extract, Transform, Load (ETL/ELT, dbt, AWS Glue, Dask), Data Modeling, Anomaly Detection, Changepoint Detection, Workflow Orchestration (Prefect, Airflow), Data Quality/Validation (Pandas Profiling, Deepchecks, Great Expectations)
Infrastructure: Docker, Kubernetes, AWS, GCP, Azure, FastAPI, Ceph, Proxmox
Database: Graph (Neptune, Neo4j), Parquet (s3), Snowflake, DuckDB, SAP Hana, MySQL, PostgreSQL, Redshift, db2, Redis
Programming Languages: Python, Bash, R, Nix, SQL, Groovy, C
Other Software/Tools: git, Linux, Tableau, PowerBI, SAP Analytics Cloud

Other interests: Snowboarding, Disc Golf, Trail Running, Backpacking, Sustainable Practices, Education, Chess, Homelab

References available upon request