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Kara A. Ponder

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Employment

Lead Data Scientist **Pivotal Life Sciences** **August 2024 – Present**

- Lead the AI pod at a biotech-focused VC fund investing in companies addressing critical unmet medical needs.
- Established strategic vision and technical roadmap for agentic AI products; orchestrated cross-functional initiatives across extraction, generation, MLOps, and multi-agent systems, managed and mentored a team of 2 data scientists and 1 ML engineer.
- Architected and deployed production-ready agentic text-to-SQL system. Achieved 82% query success rate across 15 biology, clinical trial, and company-based tables.
- Implemented RAG-based document extraction system for SEC filings analysis.

Principal Data Scientist **Noodle Analytics (Daybreak)** **July 2021 – May 2024**

- Improving supply chain efficiency by applying machine learning to demand forecasting.
- **Engagement Manager for Customer Deployment** (2023-2024). Led cross-functional team of 8 engineers (3 data scientists, 3 data engineers, 2 UI analysts) to deploy demand forecasting via a Kubeflow-orchestrated pipeline for an enterprise customer across 40 countries.
  - Developed models and supervised 3 data scientists to develop models using an ensemble of ARIMA, exponential smoothing, and XGBoost models with temporal and hierarchical reconciliation to increase the accuracy over the legacy system by up to 40% and decrease bias to within 5%.
  - Managed customer expectations and timelines, organized data engineers and UI analysts to deploy and maintain the production environment, interfaced with the product team to ensure alignment and steer roadmap.
- **Developed Core ML Product** (2022). Enhanced the internal demand forecasting Python package.
  - Added prediction intervals and Shapley values for additional interpretability of machine learning forecasts.
  - Added cross-temporal reconciliation, which resulted in a 20% accuracy improvement for customer above.

Machine Learning Researcher **SLAC National Accelerator Lab.** **August 2020 – July 2021**

- Led the Supernova Machine Learning Topical Team in an international collaboration.
- **Deep Learning with a Transformer** (2021). Created a deep learning model using the Transformer architecture to classify transient objects.

Data Science Fellow **University of California Berkeley** **September 2017 – August 2020**

- Explored data science and machine learning applications with the upcoming Rubin Observatory.
- Maintained a data reduction pipeline hosted on a high performance computing center.

Education

University of Pittsburgh: August 2012 – August 2017

- Ph.D. (August 2017) and M.S. (April 2014) in Physics.

University of Georgia: August 2009 – May 2012

- B.S in Physics and Astronomy.

Languages and Skills

- Programming: Python (expert); SQL (proficient); R (prior experience)
- ML/AI: LLMs, Multi-Agent Systems, RAG, Vector databases, Deep Learning, Time Series Forecasting, MLOps
- Frameworks: LangChain, LangGraph, TensorFlow, Scikit-learn, Transformers
- Cloud/Infrastructure: AWS (SageMaker, EC2), Docker, Kubeflow, Git
- Data: Pandas, NumPy, SQL databases, ETL pipelines
- Leadership: Team management (3-8 people teams), Cross-functional collaboration, Stakeholder management