AJEY VENKATARAMAN, Ph.D.

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Ph.D.-educated Data Scientist, experienced in developing and deploying statistical and machine learning models. I thrive on solving highly impactful, technically challenging problems through various numerical methods.

Professional Experience

Magnite April 2022 – Present

Data Scientist II *Los Angeles, CA*

- **Developed and deployed a multi-stage machine learning regression model** that optimized pricing recommendations for customer inventories, resulting in a platform-wide **monthly revenue boost of $2 million**.
- **Implemented a reinforcement learning-based solution** to optimize timeouts in online advertising efficiency, **boosting ad revenue by 3-5%** for clients, while maintaining a positive user experience.
- **Mentored two junior data scientists**, guiding them through data analysis, model development and deployment to enhance their technical skills and understanding of industry practices.
- My product was nominated for European Video Awards' Best Sell-Side Technology.

Argonne National Laboratory Aug. 2020 – March 2022

Research Data Scientist *Chicago, IL*

- Crafted a variational inference Bayesian **deep learning model** for predicting engineering component failures, achieving **80% quicker predictions and 95% accuracy**. This breakthrough resulted in estimated **cost savings of $2 million** for the US Department of Energy.
- Highlights: Deep Learning model for rapid quantification, Initial framework generation

Purdue University Aug. 2013 – May 2020

Research Assistant *West Lafayette, IN*

- Constructed a multi-scale **integrated computational and statistical model**, supplemented with experimental data analysis (200 GB), to identify failure sites and probabilities in aerospace components.
- Deployed a **convolutional neural network (CNN)** for airplane component failure prediction, surpassing traditional numerical models by 12% in accuracy and achieving an 80% reduction in prediction time.

Core Competencies & Technologies

Programming Languages : Python, Scala, Java, SQL, C++

Cloud Computing & DevOps : AWS, Git, Docker, MLFlow

Data Management & Big Data Technologies : SQL, Snowflake, Hadoop, Apache Spark

Machine Learning & Deep Learning : Scikit-Learn, TensorFlow, PyTorch, Keras, Neural Networks, SVM, Random Forest, XGBoost, Transformers, Large language models

Statistical Analysis & Data Science Methods : Hypothesis Testing, Bootstrapping, Time-Series Forecasting, Regularization, A/B Testing

Data Visualization & Tools : Matplotlib, Seaborn, Tableau

Certifications : Amazon Web Services (AWS) - Certified Cloud Practitioner

Projects

Generative AI model for DJ names | *Python, Flask, Heroku, Docker, BeautifulSoup* Dec. 2021 – Jan. 2022

- Developed an innovative web app utilizing an LSTM-based deep generative learning model to creatively generate unique DJ names, enhancing brand identity and engagement in the music industry. (link)

Formula One race analysis | *Python, scikit-learn, PyMC3* March 2021 – Apr. 2021

- Developed a Bayesian inference model to identify key factors influencing race victories in Formula One, leveraging historical data to unlock strategic insights into performance determinants.

Education

Purdue University West Lafayette, IN

Ph.D. in Aerospace Engineering *Aug. 2015 – May 2020*

- **Coursework**: Databases, System Design, Machine Learning, Deep Learning
- **Thesis**: "*A numerical and statistical framework towards high fidelity modeling*"

Purdue University West Lafayette, IN

Master of Science in Aerospace Engineering *Aug. 2013 – May 2015*

- **Coursework**: Databases, System Design, Machine Learning, Deep Learning

National Institute of Technology Surathkal, India

Bachelor's in Mechanical Engineering *Aug. 2009 – May 2013*

- **Coursework**: CS50, Data Structures, Algorithms, Linear Algebra, Probability and Statistics, Calculus