AJEY VENKATARAMAN, Ph.D.

480-278-9039 | ajey.091@gmail.com | linkedin.com/in/ajey | ajey091.github.io

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*

- Used 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

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

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

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.