AJEY VENKATARAMAN, PhD

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Experienced Data Scientist with a PhD in Engineering: Driving Innovation through Advanced Machine Learning Solutions.

Professional Experience

Magnite April 2022 – Present

Data Scientist II *Los Angeles, CA*

- Implemented an innovative AI solution to enhance online advertising efficiency, significantly boosting ad revenue while maintaining a positive user experience.
- Played a key role in adopting a **reinforcement learning-based** solution for smarter ad placements, resulting in **3-5% revenue increase for clients** and setting a new standard in advertising.
- The above product was nominated for European Video Awards' Best Sell-Side Technology.
- Engineered a machine learning regression model that strategically optimized pricing recommendations for customer inventories, catalyzing a platform-wide **monthly revenue boost of $2 million**.
- Fostered cross-functional collaboration with Product, Engineering, and Sales teams, both internally and externally, to distill and communicate critical business insights from complex datasets, driving informed decision-making.
- Mentored two junior data scientists, guiding them through complex data analysis and modeling projects to enhance their technical skills and understanding of industry practices.

Argonne National Laboratory Aug. 2020 – March 2022

Research Data Scientist *Chicago, IL*

- Crafted a sophisticated **deep learning classification 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 an **integrated computational and statistical model**, supplemented with experimental data analysis (200 GB), to pinpoint failure sites and assess failure 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, marking a significant advancement in predictive analytics for aviation safety.

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