Hammad Ahmad Usmani

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Overview

Seasoned Artificial Intelligence and Data Engineer with a R&D background from elite tech organizations; specializing in space, weather, and environmental analytics; advanced proficiency in Python programming.

Education

- **Georgia Institute of Technology** — Atlanta, GA
  Master of Science in Computer Science, Specialization in Machine Learning — *2017 - 2023*
- **University of Central Florida** — Orlando, FL
  Bachelor of Science in Computer Science, Minor in Business Administration — *2011 - 2016*

Experience

- **Senior Artificial Intelligence Research Engineer.** Lockheed Martin (NYC, NY) *Feb. 2021 - Present*
  - Engineered search engine processing unstructured data from multiple sources yielding cost reductions.
  - Developed automations for data extraction, transformation, and loading (ETL) using Python and SQL.
  - Created machine learning solutions including large language models, clustering, and neural networks.
  - Deployed data science pipelines with Python, ElasticSearch, Flask, TensorFlow, and PyTorch.
- **Software & Data Engineer.** Moody's Analytics (NYC, NY) *Dec. 2019 - Feb. 2021*
  - Developed algorithms, data processing pipelines, SQL, deep learning, and machine learning solutions.
  - Specialized in deep learning techniques, including RNNs, CNNs, transfer learning, and cluster analysis.
  - Improved AUC scores by 14% on recommendation problems using deep learning and ETL processes.
  - Created a data lake infrastructure on Athena, ECS, ECR, EMR, and S3 using Scala & Python.
- **Software Engineer.** Massachusetts Institute of Technology (Lexington, MA) *Apr. 2018 - Dec. 2019*
  - Conducted R&D, data processing, data analysis, and machine learning for advanced weather problems.
  - Engineered solutions using Python, TensorFlow, JavaScript, SQL, and Django with cloud computing.
  - Implemented lossless compression technique to reduce model output size by 99.2% in near real-time.
  - Earned the 2018 Best Paper Award with geographical information system and mapping contributions.
- **Data Scientist.** Simpluris (Orlando, FL) *Jan. 2017 - Mar. 2018*
  - Completed 200+ big data projects as a lead data analyst coordinating end-to-end with clients.
  - Produced and calculated analysis with SSRS reports using SQL and Excel for class action lawsuits.
  - Improved efficiency of API parsing algorithm by 97% from O(n) to O(log(n)) using batch processing.
  - Developed duplication detection algorithm incorporating Levenshtein Distance in Python.

Certifications

- **Google Cloud**
  Generative Artificial Intelligence, Machine Learning — *2023*
- **Harvard Business School**
  CORe Credential of Readiness, Certificate in Entrepreneurship Essentials — *2017 - 2020*
- **IBM Big Data**
  Hadoop, Programming, & Foundations — *2016*

Skills

- **Programming Languages**: Python, Scala, Java, C/C++, SQL, ElasticSearch, JavaScript, Shell
- **Machine Learning**: Clustering, Large Language Models, Neural Networks, Forecasting
- **Cloud Computing**: AWS, Azure, DataBricks, Google Cloud, IBM, PySpark, Hadoop, Linux
- **Data Science**: Data Modeling, Data Analysis, Statistical Methods

Publications

- Patel, A. B., **Usmani, H.**, & Brant, J. C. (2021). *Multivariate LSTM approach to hurricane intensity and tracking predictions.* 101st American Meteorological Society Annual Meeting. https://ams.confex.com/ams/101ANNUAL/meetingapp.cgi/Paper/380154
- **Usmani, H.**, Habibi, A., & Habibi, D. (2020). *A deep neural network to globally forecast the track and intensity of tropical cyclones.* 100th American Meteorological Society Annual Meeting. https://ams.confex.com/ams/2020Annual/meetingapp.cgi/Paper/370104
- Veillette, Mark S, Iskenderian, H., Lamey, P. M., Mattioli, C. J., Banerjee, A., Worris, M., Proschitsky, A. B., Ferris, R. F., Manwelyan, A., Rajagopalan, S., **Usmani, H.**, T. E. Coe, J. E. Luce, and B. A. Esgar. (2020). *Global synthetic weather radar in AWS GovCloud for the US Air Force.* 100th American Meteorological Society Annual Meeting. https://ams.confex.com/ams/2020Annual/webprogram/Paper363150.html
- Iskenderian, H., Veillette, M. S., Mattioli, C. J., Lamey, P. M., Hassey, E. P., Banerjee, A., Worris, M., Cancio, K., Rajagopalan, S., **Usmani, H.**, Dreher, J. P., Hock, N., & Radovan, J. (2019). *Global synthetic weather radar capability in support of the U.s. air force.* 99th American Meteorological Society Annual Meeting. https://ams.confex.com/ams/2019Annual/meetingapp.cgi/Paper/355542
- **Usmani, H.** (2019). *A deep recurrent neural network to forecast the intensity and trajectory of Atlantic tropical storms.* 99th American Meteorological Society Annual Meeting. https://ams.confex.com/ams/2019Annual/webprogram/Paper353476.html
- Almalki, H. M., Rabelo, L., Davis, C., **Usmani, H.**, & Hollister, D. (2016). *Analyzing the existing undergraduate engineering leadership skills.* SYSTEMICS, CYBERNETICS AND INFORMATICS. http://www.iiisci.org/Journal/pdv/sci/pdfs/MA302FK16.pdf