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Hammad A. Usmani

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PROFESSIONAL EXPERIENCE

Lockheed Martin Space – *Senior Artificial Intelligence Research Engineer* **NYC, NY** | *February 2021 – Current*

- Engineered data pipeline for the search of quality records yielding an estimated $1.2 million in cost reductions.
- Programmed automations that extracted, transformed, and loaded (ETL) data with Python and Linux cloud VMs.
- Creates machine learning solutions including large language models, clustering, regression, and neural networks.
- Deployed full-stack data science pipelines utilizing Python, ElasticSearch, Flask, Tensorflow, PyTorch, and Sklearn.

Moody's Analytics – *Software & Data Engineer* **NYC, NY** | *December 2019 – February 2021*

- Produced algorithms, ETL pipelines, or data science and machine learning solutions for financial problems
- Specialized in deep learning techniques, including RNNs, CNNs, transfer learning, and cluster analysis.
- Improved AUC scores by 14% to 145% on recommendation problems utilizing deep learning with ETL software.
- Developed on AWS Athena, ECS, ECR, EMR, and S3 to create a data lake infrastructure with Scala & Python.

MIT Lincoln Laboratory – *Software Engineer* **Lexington, MA** | *April 2018 – December 2019*

- Produced R&D, ETL scripts, data analysis, machine learning, and software to solve advanced weather problems.
- Engineered solutions with technologies including Python, Tensorflow, JavaScript, SQL, and Django on CentOS.
- Implemented lossless compression technique to reduce model output size by 99.2% in real-time for live updates.
- Earned the *2018 Best Paper Award* with colleagues, where I curated ETL data visualizations for the paper.

Simpluris – *Data Analyst* **Orlando, FL** | *January 2017 – March 2018*

- Completed 204 big data ETL projects as a lead data analyst and processed over 200 end-to-end projects.
- Produced and calculated analysis with SSRS reports utilizing SQL and Excel for class action lawsuits.
- Increased efficiency of API parsing algorithm by 97% from Big O(n) to O(log(n)) by including batch processing.
- Developed duplication detection algorithm by incorporating Levenshtein Distance in Python & Scala.

SHAMAN – *Software Engineer* **Orlando, FL** | *October 2015 – December 2016*

- Achieved multiple National Science Foundation Innovation Corps (I-Corps) grants for IoT and big data analytics.
- Developed software on various customer relationship management platforms, including SalesForce and Odoo.
- Calculated reports and analytics through RapidMiner, Python, PHP, PostgreSQL, and Tableau visualizations.
- Engineered prototyping boards with RFID read and write functionalities interacting with PostgreSQL in C.

EDUCATION

University of Central Florida – *B.S. Computer Science* *December 2016*
Georgia Institute of Technology – *M.S. Computer Science* *Current*

CERTIFICATIONS

IBM – *Big Data Programming, Big Data Hadoop Foundations, Big Data Foundations* *May 2016*
Harvard Business School Online – *Core, Entrepreneurship Essentials* *February 2017*
Udacity – *Machine Learning Engineer Nanodegree* *March 2018*

SKILLS

Programming Languages: Python, Scala, Java, C/C++, SQL, ElasticSearch, JavaScript, Bash, HTML + CSS
Machine Learning: Regressions, Clustering, Large Language Models, Supervised & Unsupervised Neural Networks
Cloud Computing: ETL, Data Modeling, Data Analysis, Data Science, Scala, AWS ECS, AWS EMR, AWS Lambda

CURRICULUM VITAE

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