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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 search engine for quality records with machine learning and an estimated \$1.2 million in cost savings.
- Developed local search and single pixel adversarial algorithms against ensemble deep learning models in images.
- Created transfer learning labeling interface for the SQuAD dataset utilized in a question answering BERT model.
- Deployed full-stack data science pipelines utilizing Python, JavaScript, Pandas, Flask, Plotly, PyTorch, and Sklearn.

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

- Analyzed algorithms and data science methods to implement machine learning solutions for finance problems
- Specializes in deep learning techniques including RNN's, CNN's, transfer learning, and cluster analysis.
- Improved AUC scores by 14% to 145% on recommendation problems utilizing deep learning.
- Develop 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, data analysis, machine learning, and software engineering 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 *2018 Best Paper Award* with team from Massachusetts Institute of Technology's Lincoln Laboratory.

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

- Completed 204 big data ETL projects as lead data analyst and processed more than 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 Big O(log(n)) in Python & Scala.
- 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, MongoDB, JavaScript, Bash, Bootstrap CSS

Machine Learning: Statistical Modeling, Multivariate Regressions, Supervised & Unsupervised Neural Networks

Cloud Computing: Data Modeling, Data Analysis, Data Science, Apache Spark, AWS ECS, AWS EMR, AWS Lambda

CURRICULM 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>