

Hammad Ahmad Usmani

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Ranked in the top 1% of over 4 million global Python developers on the HackerRank Python Leaderboard

EXPERIENCE

- **Machine Learning Engineer** United Nations 2024 - Current
 - Engineer Generative AI solutions for the UN Office of Information and Communications Technology
 - Deliver Chatbots, LLM's, ML Ops, AI Ops, Prompt Designing, Prompt Engineering, and Data Science
 - Programmed GPT-4 on Azure with Python for UN80 suggestions to identify key themes and efficiencies
 - Facilitate UN initiatives with AI and LLMs to support inclusive development and responsible tech use
 - Developed ChatUN app with Ollama, OpenWeb UI, Llama 4, and nginx on AWS without external API's
 - Governs AI enablement across the UN Secretariat with Microsoft CoPilot for more than 37k colleagues
 - Provides DGACM AI security and Python development for the ODS AI Assistant with RAG on Azure
- **Artificial Intelligence Engineer** Space 2021 - 2023
 - Search product reduced an estimated \$700k/year per spaceship based on Lockheed Martin supply chain
 - Deployed AI, machine learning, dashboards, and data analytics for Space and Corporate lines of business
 - Engineered original data lakes & pipelines with 99.99% uptime utilizing NASA's TRL operational levels
 - Fine-tuned deep neural networks and statistical models through customer feedback and cross-validation
 - Integrated end-to-end ML with Azure, AWS, CI/CD, Git, Docker, Elasticsearch, REST APIs, & web apps
 - Engineered, trained, and fine-tuned LLM question-answering for quality and manufacturing dispositions
 - Produced & maintained machine learning algorithms through Azure, Python, SQL, sklearn, & Tensorflow
 - Integrated IBM Watson for search, translation, speech recognition, and vision to cloud apps using Python
- **Machine Learning Engineer** Moody's 2019 - 2021
 - Deployed web scraping for machine learning and LLMs for NYSE sentiment analysis and financial data
 - Engineered data processing that coordinated natural language processing from teams utilizing PyTorch
 - Solved analytics and data engineering problems on Azure & Google Cloud Platform with Tensorflow
 - Innovated server-less and containerized solutions to deploy and scale ML models with continuous training
 - Developed natural language processing with Python, Spark, SQL, deep learning, and language models
 - 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
 - Engineered a data lake infrastructure on AWS Athena, ECS, ECR, EMR, and S3 using Scala & Python
 - Developed automated sentiment analysis of NYSE utilizing deep learning from investors social media
- **Software Engineer** MIT 2018 - 2019
 - Conducted MLOps, data processing, data science, and machine learning for advanced weather problems
 - Innovated deployment of machine learning on the Azure & AWS cloud realtime globally with Tensorflow
 - Developed software to continuously monitor machine learning performance based on quality requirements
 - Engineered solutions using Python, JavaScript, and SQL with cloud computing to operationalize AI
 - Implemented lossless compression technique to reduce model output size by 99.2% in near real-time
 - Collaborated on the 2018 Best Paper Award from innovations in machine learning and neural networks
- **Data Scientist** Simpluris 2017 - 2018
 - Completed 200+ big data cases as a lead data analyst utilizing with SQL, Python, PyTorch, & Tensorflow
 - Developed natural language processing algorithms for geospatial data based on input address on Azure
 - Produced and calculated analysis with SSRS reports using SQL and Excel for class action lawsuits
 - Improved efficiency of API parsing algorithm by 97% from linear to logarithmic to linear growth
 - Developed duplication detection algorithm incorporating Levenshtein Distance in Python and Scala

• Machine Learning Engineer SHAMAN

2015 - 2016

- Achieved multiple National Science Foundation Innovation Corps grants for IoT and big data analytics
- Invented algorithms with Python on deep neural networks consisting of chat capabilities for NFC tags
- Engineered microcontroller prototyping boards with RFID and NFC IoT functionalities in Java, C/C++
- Coordinated data sourcing, labeling, and acquisition from international translators for multilingual chat
- Discovered novel algorithms in deep learning to forecast hurricanes and tropical storms with LSTM's

EDUCATION

- **Georgia Institute of Technology** Atlanta, GA US
Master of Science in Computer Science
- **University of Central Florida** Orlando, FL US
Bachelor of Science in Computer Science

CREDENTIALS

- **Harvard Business School**
- *CORE Credential of Readiness, Certificate in Entrepreneurship Essentials* 2024
- **Microsoft**
- *Azure AI Engineer Associate* 2025
- **Google**
- *Generative Artificial Intelligence, Machine Learning, Vertex AI* 2025

SKILLS

- **Machine Learning:** Forecasting, Neural Networks, Fine-Tuning, MLOps, GenAI, Meta Llama, ChatGPT
- **Programming Languages:** Python, Javascript, Java, C#, SQL, Unity, Oculus VR, iOS, Android, React
- **Data Engineering:** ETL/ELT, NLP, Large Language Models, CI/CD, Tensorflow, PyTorch, Sagemaker
- **Cloud Computing:** AWS, Azure, DataBricks, GCP, Snowflake, Tableau, Docker, PowerBI, OpenAI

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>