

MAHAM HAROON

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Applied Data Scientist and Machine Learning Expert

Applied Data Scientist and Machine Learning Expert with experience designing AI-driven products, experimentation frameworks, and large-scale analytics systems across telecommunications, technology, cybersecurity, and startup environments. Proven track record of building agentic AI platforms, predictive machine learning models, and data products that drive user acquisition, retention, monetization, and executive decision-making. Experienced in leading cross-functional initiatives spanning product, marketing, engineering, and business strategy while translating complex data into actionable insights. Founder of an AI startup developing applied machine learning solutions and cybersecurity products. Internationally recognized through competitive data science awards, invited conference reviewerships, technology award judging appointments, and widely read technical publications.

CORE COMPETENCIES

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|--|---|------------------------------------|
| • Growth Analytics & Product Analytics | • Agentic AI Systems & Intelligent Analytics | • Cross-Functional Leadership |
| • Applied Machine Learning & Generative AI | • Customer Segmentation & Personalization | • Experimentation & A/B Testing |
| • Predictive Modeling & Statistical Analysis | • AWS Cloud, ETL & Data Engineering | • Data Strategy & Decision Science |
| • Product Strategy & Monetization Analytics | • Executive Data Storytelling & Visualization | • NLP & Large Language Models |

PROFESSIONAL EXPERIENCE

9D TECHNOLOGIES/IMAGINATION AI, 2026

GROWTH DECISION SCIENCE LEAD (CONSULTANT)

- Responsible for owning the analytics strategy for user acquisition, activation, retention, and monetization across the B2C app portfolio.
- Designing and owning the A/B testing pipeline.
- Partnering closely with Product and Marketing teams to identify opportunities for user and revenue growth through data insights.
- Translate complex datasets into clear, strategic recommendations, informing product /marketing decisions.

TELEFONOR GROUP, 2025 TO 2026

DATA SCIENCE CONSULTANT

- **Led end-to-end Data Science initiatives** within the Telecom Marketing Department, driving scalable analytical solutions and measurable business impact.
- **Developed AnalytIQ**, an AWS-powered agentic analytics app deployed via Amplify, enabling conversational, on-demand insights and data-driven decision-making.
- **Enhanced Value Segmentation** by utilizing clustering alongside statistical optimization, significantly improving product-based targeting and campaign performance.

KUBERSIGNAL LLC, BOSTON, MA, 2022 TO PRESENT

FOUNDER / DATA SCIENTIST

- **Negotiated** with various investors when **securing pre-seed funding** as well as fostered long-lasting relationships.
 - Managed an array of tasks from hiring to decision-making, prototyping, architecting, data science, analytics, and content writing functions.
 - Managed a small team of 2-3 contract workers.
- App (Scam-Ninja): Developed an AWS-integrated app to safeguard against social engineering attacks on mobile devices (prototype)
- Consulting: Completed projects for clients including sentiment ratings for companies and a communication pipeline Integration to AWS using AWS lambda, CloudWatch and API Gateway.

BITSIGHT, BOSTON, MA, 2021 TO 2022

DATA SCIENTIST - THOUGHT LEADERSHIP

Assumed responsibility for big-data analysis, creating useful insights and visualizations for the thought leadership team.

Contributed Content at BitSight in publications section, notable projects included:

- Vulnerability-testing viability classifier (NLP, classification)
- Data-source catalog generation (ETL, Jenkins, Spark)
- Proxy-Ratings algorithm design (Statistics)
- Ransomware Likelihood model (Predictive Modeling)

LAKSON GROUP - SYBRID LIMITED, 2020 TO 2021

CONSULTANT / DATA SCIENTIST

Enacted initial research and prototyping of a product for brand sentiment analysis in both English and Urdu languages, based on Twitter and Facebook data utilized in multiple ML algorithms.

UNIVERSITY OF MASSACHUSETTS, AMHERST, MA, 2017 TO 2021

TA / RA - CICS

- Functioned as a Teaching Assistant providing guidance and support to students in association with Artificial Intelligence, Reasoning Under Uncertainty, and Web Programming.
- Contributed as a Research Assistant at DaROS Lab; this entailed actively participating in cutting-edge research projects in Robotics and Machine Learning, along with working on the state-of-the-art Mini-Cheetah Robot by MIT.

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY 2016 TO 2017

TA / RA - SMME

- Teaching Assistant for Artificial Intelligence, Fuzzy Control Theory, Mobile Robotics, and Robotics.
- Research Assistant at RIME Lab; research projects encompassing Robotics, Computer Vision, and Machine Learning, specifically working with advanced autonomous systems such as the NAO Robot and Assistive Wheelchair.

PTCL 2014 TO 2015

Telecom Engineer

Fulfilled Duties monitoring telecom data and tracking system failures in the area. Made reports and presented findings.

DATA SCIENCE WINNING SOLUTIONS

2023-Bronze Medal in AI Village Capture the Flag @ DEFCON31 (total Participants = 1000+)- Involved 28 tasks to where an AI was to be fooled to get the flag. Completed tasks involved fooling ML image detection for misclassification, LLM prompt injections, image steganography to find encrypted messages and dimensionality reduction techniques to extract hidden messages.

2024-Silver Medal in Santa 2023 - The Permutation Puzzle by Kaggle (total Participants = 1000+) - Involved solving permutations based puzzles like Rubik's Cube, Wreath and Globe in the fewest moves possible. Solutions used to win involved combining various algorithms such as Bidirectional A-star with greedy approaches as well as evolutionary algorithms.

2024-Bronze Medal in EEDI Mining Misconceptions in Mathematics 2024 (sponsored by Bill & Melinda Gates Foundation) and 13th place Efficiency Leaderboard (total Participants = 1400+)- Involved identifying misconceptions in incorrect answers by students using LLMs. Winning Solution involved utilizing a pipeline involving Qwen and LoRA alongside reranking. Efficiency solution involved using caching and combining smaller models like GTE and MPNET for better results.

2025-Silver Medal in Santa 2024 - The Perplexity Permutation by Kaggle (total Participants = 1500+) - Involved lowering perplexity of text composed of scrambled words using Gemma-9b. Solutions Involved using adapted versions of Simulated Annealing, Genetic algorithms, Greedy Swaps and customized movements such as permutations and traversals.

2026-Bronze Medal in Kaggriculture - Maximizing Income in Farming Simulation by Kaggle (total Participants = 10k+) - Involved increasing income via optimizing buying and selling using frontrunning and competitive gating, as well as behavior cloning of the opponents. AI agents were used in algorithmic generation.

PAST ACADEMIC PROJECTS

Tiny Nets — Small parallel neural nets for space-efficient computation - A neural network variation of divide and conquer for inexpensive computation at test time; also, reduced test time by 97.76% (8ms to 186us) and the # of parameters from 3.51e12 to 5.83e5 (by 99.97%) while simultaneously decreasing mean squared error.

Rapid Identification of Best P-Sparse Nets — Removing redundant neurons from a neural network. (link) - Eliminated 83% of redundant network parameters by rapidly identifying the best p-sparse networks in the first few training epochs.

Autoencoder Distinctive Capability — Potential for identifying relationships in images. (link)

Grammatical Error Correction — By encoding words as pixels in images. (link)

Master's Thesis: "Bidirectional Neural Networks for Simultaneous Place and Object Classification"

Bachelor's Thesis: "FPGA-Based Visual Object Tracking"

EDUCATION AND CREDENTIALS

MS COMPUTER SCIENCE - (PHD CANDIDATE)

College of Information and Computer Science, University of Massachusetts, Amherst, MA

MS - ROBOTICS AND INTELLIGENT MACHINE ENGINEERING

SMME, National University of Science and Technology, Islamabad, Pakistan

Graduated Top of Class

BS - ELECTRICAL ENGINEERING

Pakistan Institute of Engineering and Applied Sciences, Nilore, Pakistan

CERTIFICATIONS AND TRAINING

- Certificate - AWS Certified Solutions Architect - Professional
- Training - Certified Ethical Hacker (C | EH) — EC-Council, USA: Certificate - Certified Ethical Hacker (C|EH Master); Certificate - C| EH Theory; score: 113/125; Certificate - C| EH Practical; score: 20/20
- Certificate - Business Foundation Series for Scientists and Engineers ([link](#))
- Seminars - Isenberg School of Management, University of Massachusetts, Amherst, MA - Negotiations | Organizational Strategy | Business Intelligence | Operations Management | Finance Marketing Strategy | Accounting for Decision Making | Leadership Strategies.

AWARDS

- Competitions Expert by Kaggle (ranked top 0.5%), 2025
- Recipient of Open Group's Badge in Professional Communication for Master Data Scientist, 2023
- Recipient of President's Gold Medal, 2018
- Recipient of Inclusion RSS@18 Fellowship at **Carnegie Mellon University**, 2018
- Recipient of ICT Endowment Scholarship, 2016 to 2017
- 3rd Prize in "Graduate Research Poster Competition" at Research Centre for Modeling & Simulation, 2016

HONORS

- In 2025 and 2026 invited as a reviewer for CogSci Conference 2025/2026.
- In 2025 Invited Judge at 2025 Globee Artificial Intelligence Awards and 2025 Stevie Awards for Women in Business in Marketing Category.
- In 2024 Invited Judge at the 2024 Timmy Awards for Best tech for Good category, Globee Awards for 19th Annual 2024 Information Technology World Awards, 2024 SIIA CODiE Awards, 2024 Stevie Awards for Women in Business in Company/Organization Achievement Awards.
- In 2023 Invited Judge at the 2023 Stevie Awards For Women in Business for Most Innovative product category, Globee Awards for 18th Annual 2023 Information Technology World Awards, 2023 SIIA CODiE Awards, Globee Awards for 19th Annual 2023 Cybersecurity World Awards
- In 2022 Invited Judge at the 2022 Stevie Awards For Women in Business for New Product & Service Awards category, Globee Awards for 15th Annual 2022 Women in Business and the Professions World Awards

PUBLICATIONS

Publication - Reprint

- Haroon, Maham. "What to Prune and What Not to Prune at Initialization." arXiv preprint arXiv:2209.02201 (2022). ([Link](#))

Whitepapers

- Navigating the Data Privacy Paradox: Investigating the Gap between Concerns and Actions ([blog post](#)) ([whitepaper](#)) ([@youtube-video](#)) ([press release](#))
- From Months to Minutes: Can New Regulations Accelerate the Cyber Incident Disclosure Process? ([blog](#)) ([whitepaper](#))
- BitSight Insights: Mobile Application Risk Report ([blog](#)) ([whitepaper](#))

Articles

BITSIGHT

- Russia-Ukraine and the Cyber Threat Landscape ([link](#))
- BitSight Apache Risk Analysis Highlights Need to Address CISA "Known Vulnerabilities" ([link](#))

TOWARDS DATA SCIENCE - A MEDIUM PUBLICATION

- Understanding AUC Scores in Depth: What's the Point? ([link](#))
- Beyond Bar Charts: Data with Sankey, Circular Packing, and Network Graphs ([link](#))
- P-Values: Understanding Statistical Significance in Plain Language ([link](#))
- Exploring Counterfactual Insights: From Correlation to Causation in Data Analysis ([link](#)) Beta
- Distributions: A Cornerstone of Bayesian Calibration ([link](#))
- To 1 or to 0: Pixel Attacks in Image Classification ([link](#))

SERIES: DATA BIAS HACKERS ([link](#))

- Cognitive Biases in Data Science: The Category-Size Bias ([link](#))

AI ADVANCES - A MEDIUM PUBLICATION

- Beyond the Hype: Google DeepMind's Gemini, and its superior performance on the MMLU benchmark ([link](#))

ADDITIONAL INFORMATION

Languages: English, Russian (basic), Urdu

Technical Proficiencies: Python, Spark, SQL, Git, TensorFlow, Amazon Aws, Scikit-Learn, Pytorch, Jenkins, Tableau, Plotly, Solutions Architect (AWS), MATLAB, Machine Learning, Big Data, Business Analytics, NLP, AI, Predictive Modelling, Cybersecurity, Bayesian, PGM Statistics