# Muhammad Ali Haider

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## Professional Summary

Python | Data Science & AI/ML | Statistics | Analytics | Operations Research | Mathematical & Computational Modeling |Supply Chain

Software Skills - Python, Tableau, SQL, C++, Java, CPLEX, MATLAB, Excel

## Work experience

8/2020 – Present **Data Scientist,** HTN Networks Inc (Cisco Partner) – Irvine, CA
Build AI models to optimize internet traffic routing and identify malicious traffic.

6/2018 – 7/2018 **Data Science intern,** Rafay Systems - Sunnyvale, CA
Mathematically modeled the problem as a dynamic programming optimization algorithm to maximize the server utilization for a Silicon Valley Edge Computing Startup.

1/2018 – 5/2018 **Grad Consultant,** MUFG Bank – New York, NY
- Utilized advanced analytics and data visualizations tools to achieve supplier consolidation
- Developed a hierarchy of KPIs that helped the bank in making more informed decisions.

8/2017 – 1/2018 **Graduate Research Assistant- Computational Lab,** NC State University - Raleigh, NC
Computational modeling of environmental footprints across various levels of the supply chain.

9/2015 – 5/2017 **Engineering lab Assistant –** Istanbul Sehir University - Istanbul, Turkey
Course: ISE 521 Introduction to Operation Research and Industrial Engineering Topics.
Grading and helping students to solve and debug assignments in C++ and Python.

6/2014 – 9/2015 **Supply Chain Officer,** Lucky Cement Limited - Karachi, Pakistan
Reduce overall procurement lead time by coordination of inventory, logistics and suppliers.

## Recent Projects

1/2021 – 3/2021 **Multi-Variat forecast of stock prices using LSTM**
Developed a stock trading model that multi variate LSTM forecasting to predict the future ups and downs of stock price and take decision accordingly. https://bit.ly/39mBnbw

1/2020 – 5/2020 **Computer Vision: Grocery item classifier**
Developed a classifier model based on pretrained VGG-16 model and CNN layers to distinguish 25 grocery store products. The model achieved 90% accuracy on the unseen data. GitHub https://bit.ly/3rqad9G

6/2020 – 12/2020 **Natural Language Processing: A chatbot that is wise.**
Trained the model on 700 quotations from diversified domains (phycology, relationships, spirituality, etc.). The bot will give satisfactory answer to 80% of your hard questions by matching it with relevant quotations. Try it here http://www.thebhalol.com/

6/2020 – 12/2020 **A Generative Adversarial Network (GAN)**
Implemented Cycle GANs for data augmentation for a computer vision project. Number of images were doubled, and the generated data improved the model performance by 10%.

8/2019 – 12/2019 **Natural Language Processing: Quora Insincere question classification**
Identify and flag insincere questions using LSTM, CNN and GRU. GitHub http://rb.gy/tlhia1

8/2019 – 12/2019 **Deep Learning: Prediction of Battery Life for NASA's Small Electric Aircraft**
A research project that aimed at predicting reaming battery life using SVM, Random forest and deep learning on 4 million entry data from 9 sensors. GitHub Link http://rb.gy/jfkhgz

7/2019 – 12/2019 **Capacitated vehicle routing optimization: for Electric delivery truck**

Delivery trucks were subjected to capacity and battery charge life constraints that had to satisfy demands from 155 customers per day with time window constraints. The problem was formulated and solved using google OR Tools. Github Link https://bit.ly/3df6bfh

1/2019 – 5/2019 **Aircraft Maintenance scheduling optimization**

Optimized aircrafts maintenance schedule using Mixed Integer Linear programing (MILP) by CPLEX. GitHub link http://rb.gy/tpgmx1

## Publications

Master thesis tile "The Assessment and Integration of Material Footprint in National Energy Development Plans''. Diss. 2017.

Kucukvar, M., Haider, M.A. and Onat, N.C., 2017. Exploring the material footprints of national electricity production scenarios until 2050: the case for Turkey and UK. Resources, Conservation and Recycling, 125, pp.251-263.

Kucukvar M., Onat, NC, Haider, MA. "Scarce Resource-dependence of the European Electricity Production Scenarios until 2050" The International Symposium on Sustainable Systems and Technology (ISSST), May 16-18, 2016, Phoenix, Arizona, USA

Kucukvar, M., Onat, N.C., Haider, M.A. and Shaikh, M.A., 2017. A global multiregional life cycle sustainability assessment of national energy production scenarios until 2050. In International Conference on Industrial Engineering and Operations Management Bogota.

First author and presenter At SPE International Intelligent Energy Conference, UAE 2013, SPE, the paper titled "Intelligent integrated management for new ventures in high risk developing countries" ISBN 978-1-61399-276-0. An energy sector firm's Supply chain KPI were developed using the Supply Chain Operation Reference Model (SCOR) model

Onat, NC, Haider, MA, Kucukvar M, "Material Dependence of National Electricity Generation Plans: The Case for Turkey and United Kingdom", Journal of Cleaner Production, 2017

Sen B, Kucukvar M., Onat, NC, Haider, MA, "Material Footprint of Alternative Fuel Vehicles: A Multi-Regional Input-Output Life Cycle Assessment", The journal of Energy and Environmental sciences, 2016.

Onat, N.C., Kucukvar, M., Toufani, P. and Haider, M.A., Carbon Footprint Analysis of Electric Taxis in Istanbul. 2017

Design of Supply Chain at Amreli steels limited and the study of the Supply Chain Operation Reference Model (SCOR, 2013- NED University Undergrad final project

## Honors and awards

North Carolina State University PhD Fellowship award, 2017
President and Founder of the Entrepreneur Society NED University, 2013. www.nedentrepreneurshipsociety.com

## Educational Background

2020 **Master's - Operations Research** - North Carolina State University, USA

2017 **Master's - Industrial & System Engineering** - İstanbul Şehir Üniversitesi, Turkey

2013 **Bachelors - Industrial and Manufacturing -** NED University of Eng. and Tech, Pakistan