

# Asif Al Faisal

## Curriculum Vitae

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### CAREER PROFILE

#### Asif Al Faisal

Data Analyst | International Maize and Wheat Improvement Center (CIMMYT)

A Data Science Enthusiast who is passionate about Data Analytics, Machine & Deep Learning. I consider myself perceptive, results driven and team player. I have more than six years of data analysis experience. For past two and a half years, I have been working in wide variety of international research projects that are enabling me to grow extensive expertise in the agricultural research field. With all my working experience and personal endeavour, I have been developing myself with diverse set of skills that includes data management and wrangling, algorithm development, predictive modeling, problem solving, teaching experience and team management.

### RESEARCH INTERESTS

Application of artificial intelligence (AI) with explainability in agriculture, remote sensing and food system; Complex system analysis; Toxicology; Drug discovery; Environmental regulation

### KEY SKILLS

- Highly skilled in **Python programming** for data wrangling, processing, statistical analysis, machine learning, and visualization.
- In-depth knowledge and implementation expertise on **Graph Neural Net**.
- Working experience in processing large scale weather (ERA5), geospatial and remote sensing data (optical and SAR) in Python.
- Hands-on experiences in **deep learning** models (CNN, RNN etc) with explainable AI (**XAI**) in different applications such as crop yield prediction, digital soil mapping, change of detection using remote sensing data.
- A handful of experiences of **web based dashboard development** using Streamlit and Dash for web-base data analysis and mapping platforms.

### PROGRAMMING LANGUAGES, LIBRARIES & TOOLS

|              |                     |             |                       |
|--------------|---------------------|-------------|-----------------------|
| ✓ Python     | ✓ Scikit-learn      | ✓ Plotly    | ✓ Google Earth Engine |
| ✓ R          | ✓ PyTorch           | ✓ Seaborn   | ✓ QGIS                |
| ✓ JavaScript | ✓ PyTorch Geometric | ✓ Dash      | ✓ Microsoft Office    |
| ✓ SQL        | ✓ NetworkX          | ✓ Streamlit | ✓ Heroku              |

### EDUCATION

- 2018 **M.S. in Information Technology**  
IIT, University of Dhaka, Bangladesh
- 2014 **B.Sc. in Electrical and Electronics Engineering**  
Khulna University of Engineering and Technology, Bangladesh

### PUBLICATIONS

- M. A. Rahman A. **Faisal** T. Khanam M. Amjad and M. S. Siddik “*Personality detection from text using convolutional neural network*” pp. 1-6 05 2019. Available online: [Click here.](#)
- ARRC programme newsletter. “*Innovative new crowd sourcing tool for gathering crop disease reports developed in South Asia*” p. 2 09 2020. Available online: [Click here.](#)

### ENGLISH LANGUAGE PROFICIENCY

|                                       |                |              |              |               |
|---------------------------------------|----------------|--------------|--------------|---------------|
| IELTS Academic<br>Overall Score - 7.0 | Listening: 7.0 | Reading: 8.5 | Writing: 6.5 | Speaking: 6.5 |
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## EXPERIENCE

### **Data Analyst** | *International Maize and Wheat Improvement Center (CIMMYT), Bangladesh. (Aug 2019 – Present)*

- Data wrangling, processing, statistical analysis, machine learning, and visualization in Big Data Analytics for Climate-Smart Agriculture in South Asia (BigData2CSA) Project
- Developed a Natural Language Processing (NLP) enabled web-based tool for Asia Regional Resilience to a Changing Climate (ARRCC) Research Programme
- Transport network optimization for Cereal Systems Initiative for South Asia Mechanization Extension Activity
- Teaching assistant in Tailor-Made Training Plus (TMT+) for Bangladesh – An Orange Knowledge Programme
- Application of **Graph Neural Net** for physicochemical properties prediction of chemicals
- Change detection of forest in Rohingya camp, Bangladesh using Sentinel-1 SAR Image
- **Segmentation using U-NET** for Boundary detection from Drone Images
- Variability of rice grain arsenic concentration in Bangladesh: application of machine learning and XAI
- Application of Machine Learning and **explainableAI** in digital soil mapping
- Supervise a local organization for developing a web-based decision-making tool

### **Engineer (Team Lead)** | *edotco Bangladesh Co. Ltd. (Jul-2017 to Aug-2019)*

- As a team lead my responsibilities were to, manage a team of four junior engineers and two network transmission engineers, analyze daily network traffic data along with power consumption data and generate statistical summary reports of power to performance ratio to aid in the decision making of upper management.

### **Engineer** | *edotco Bangladesh Co. Ltd. (Aug-2015 to Jun-2017)*

- My responsibilities as an Engineer were to, monitor telecom network of two major mobile network operators (GP & Robi) in Bangladesh, provide countrywide remote network support on a roster basis and development of multiple python subroutine to automate multiple reports.

## TEACHING EXPERIENCE

### **Tailor-Made Training Plus (TMT+): Orange Knowledge Programme**

In this joint training program between BARI, University of Twente and CIMMYT, I have been assigned in following two training courses:

- Introduction to Scientific Programming (*eqv. to 3 ECTS credits*)
- Geospatial Data Analysis & Spatiotemporal Machine Learning with Python (*eqv. to 3 ECTS credits*)

## LEADERSHIP/TEAMWORK EXPERIENCE

- Around two (2) years of experience of managing a group of six (6) engineers.
- Collaboration with multiple research groups that are mentioned in the “**Professional Experience**” section.
- Worked as *Assistant General Secretary* of Electrical Association of KUET, during my bachelor’s.

## CERTIFICATIONS

### **Genomic Data Science Specialization offered by John Hopkins University (Coursera)**

- Apr’20    1. Introduction to Genomic Technologies. Available online: [Click here](#).  
2. Algorithms for DNA Sequencing. Available online: [Click here](#).

### **Deep Learning Specialization Series (5 Courses) by Andrew Ng.** Available online: [Click here](#).

- Mar’20    1. Neural Networks and Deep Learning  
2. Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization  
3. Structuring Machine Learning Projects  
4. Convolutional Neural Networks  
5. Sequence Models

### **Food Security and Sustainability - Crop Production (WageningenX SFSCPx Certificate)**

- Feb’20    Available online: [Click here](#).

- Jun’19    **Introduction to SQL** (Available online: [Click here](#).)

- Jan’17    **Data Science Foundations Certified by IBM** (Available online: [Click here](#).)

## AWARDS & ACKNOWLEDGEMENT

- District Runner-up in National Science Fair for building a Low-Cost Microscope in 2008.
- Divisional Champion in 3<sup>rd</sup> Bangladesh Math Olympiad in 2005.
- Hari Sankar Nayak et al. “Rice yield gaps and nitrogen-use efficiency in the Northwestern Indo-Gangetic Plains of India: Evidence based insights from heterogeneous farmers’ practices” Field Crops Res., 275 (2022), Article 108328. Available online: [Click here](#). (Acknowledgment)

## REFERENCES

1. **Dr. Timothy J. Krupnik**

Country Representative for Research and Partnerships (CIMMYT / CGIAR)

CGIAR

Gulshan-2, Dhaka, Bangladesh

**Email:** t.krupnik@cgiar.org

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2. **Dr. Zia Ahmed**

Research Associate Professor (Data & Visualization Scientist),

Research and Education in Energy, Environment and Water (RENEW)

University at Buffalo, NY, USA

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3. **Dr. Urs Schulthess**

Senior Scientist (Remote Sensing)

CIMMYT–China at Henan Agricultural University,

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4. **Md. Saeed Siddik**

Assistant Professor

Institute of Information Technology (IIT),

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