Wakil Sarfaraz (PhD)
Al Maather District, Riyadh, KSA
Citizenship: British, Mob: +966554922058, Email: wakilsarfaraz@gmail.com
LinkedIn: https://www.linkedin.com/in/wakil-sarfaraz-254832122/
Consultancy Website: https://www.mmcesp.com
Github: https://github.com/wakilsarfaraz

Professional Experience:

Jan-2021
Present **Assist. Prof. Mathematics and Statistics** **Alfaisal University** **Riyadh, Saudi Arabia**

• *Lead instructor for the delivery of two full courses* • *Calculus for business and Probability & Statistics for Engineers*

Jan-2019
March-2022 **Founder and Consultant** **MMCESP** **(Remote), UK**

• *Contracted spatiotemporal predictive modelling for Lawrence Berkeley National Lab* • *Consulted ARVA Intelligence Ltd on developing data-driven models of RDS for Nitrogen cycle in the application of agricultural fertiliser* • *See the list of projects*

Oct-2020
Jan-2021 **Senior Data Scientist** **Oxford Biomedica** **Oxford, UK**

• *Support PR&D in data-driven process characterisation* • *Provide subject matter expertise in data related products* • *The key senior data scientist in PR&D department* • *Strategise data centralisation and automation infrastructure*

Jan-2020
June-2020 **Lead Data Scientist** **UCAS** **Cheltenham, UK**

• *Data mining/processing/cleaning* • *Analytics and product development* • *Extracting business insight from data* • *Developing and applying statistical ML pipelines*

Oct-2018
Jan-2020 **Mathematical Modeller** **University of Birmingham** **Birmingham, UK**

• *Supervised and unsupervised ML pipelines for NGS data* • *Bioinformatics research on DNase-seq, ChIP-seq and RNA-seq data* • *Taught Bayesian Dynamic Networks and Hidden Markov Models to MSc* • *Supervised MSc projects on ML applications of enhancer prediction in genome*

Jul-2018
Sep-2018 **Contractor (Temporary)** **University of Sussex** **Brighton, UK**

• *Developed technical user-guide documentation for a Python-based machine-learning software called BPEPDE.*

Oct-2014
May-2018 **Associate Tutor (P-T)** **University of Sussex** **Brighton, UK**

• *Provided undergraduate-level training in Numerical analysis II, Financial computing with MATLAB, Geometry, Linear algebra, Complex analysis, Introduction to probability and Calculus.*

Education:

Oct-2014
Sep-2018 Ph.D Mathematical Modelling Computational Biology University of Sussex Brighton, UK

Oct-2013 Sep-2014	MS.c Mathematical Modelling & Scientific Computing	University of Oxford	Oxford, UK
Sep-2010 Jun-2013	BS.c Mathematics	University of Sussex	Brighton, UK

Publications:

https://scholar.google.co.uk/citations?user=8fjQT-wAAAAJ&hl=en&oi=ao

Conferences and Workshops

Oct-2019	Natural Science Seminar Series	Altinbash University	Istanbul, Turkey
Jul-2019	Symposium on Genome Structure & Function	University of Birmingham	Birmingham, UK
Jan-2019	Next generation Biologist Workshop	University of Leeds	Leeds, UK
Nov-2018	Winter School on Quantitative Systems Biology, Learning and AI	ICTP	Trieste, Italy
Jun-2018	SIAM National Student Chapter	University of Bath	Bath, UK
Apr-2018	Physics Without Frontiers (PWF)	University of Kabul	Kabul, Afghanistan
Sep-2017	SciCADE	University of Baths	Bath, UK
Jul-2016	ECMTB	University of Nottingham	Nottingham, UK
Sep-2016	BioDynamics	University of Exeter	Exeter, UK
Jan-2016	Geometric PDEs and their Approximations	University of A&M	CS, Texas, USA
Jul-2015	Multimodal Monitoring of Cell Migration	Jülich Biology Research Centre	Aachen, Germany
Jul-2015	Coupling Geometric PDEs With Physics	Sir Isaac Newton Institute	Cambridge, UK
Aug-2015	Multimodal Monitoring of Cell Migration	RWTH	Aachen, Germany

List of Projects with Consulting and Delivery Contribution (See attached summary)

- Modelling Honeycomb Panels for Soundproof in Construction and Aviation (2015)
- Wear Analysis of Aircraft Wheel by Modelling Temperature at Touch Down Friction (2016)
- UK Power Consumption Predictive Modelling and Source Comparison (2019)
- Optimization of Nitrogen Cycle in Agricultural Fertilisers (2020)
- Hypoxia and Cancer Genomics (2018/19)
- Classification of cis-Regulatory Elements in Mouse and Human Genome (2018/19)
- Bayesian Parameter Estimation for PDEs (BPEPDE) (2018)
- Modelling Stingray Spot Evolution by Reaction-Diffusion Systems (2018)
- Mathematical Modelling of Oxygen Sensors (Clark Electrode) (2014)
- Offer Rate Calculator (2020)
- Learner Personas (2020)
- Leaky Hosepipe (2020)

- Positioning Index (2020)
- Analysis and predictive modelling of car price (2021)
- Data analytics case study on the world happiness data by country (2021)

Data Science and Machine-Learning Hard Skillset

Statistics and ML: Single/multilinear Regression modelling, Classification methods i.e. Decision trees, RF, iRF and Logistic Regression. Dimensionality reduction methods i.e. SVD, PCA and PLS. Spatiotemporal parameter estimation using Bayesian statistics and Maximum likelihood. Pattern recognition using HMM and Time-series analysis using FFT and WT.

Fundamentals: Experienced lecturer in Linear Algebra, Statistics, and Calculus at university level (see Professional Experience section). Econometrics, pricing models and forecasting methods.

SAS, R and Python: ML models in R and Python. Experience in using SAS for data sourcing and mining. Some familiarity with C++ based libraries such as Dealii.

Bioinformatics: Bowtie, Bedtools, Samtools, Cufflinks, Genome Browser, IGV for Alignment , Sorting, Indexing and format-conversion peak calling of NGS data such as ChIP-seq, DNase-seq and RNA-seq.

Image analysis: Image analysis using data science techniques such as the application and development of cell-tracking technologies or face recognition technologies.

Data Visualisation: Paraview, VisIt, Cytoscape, Python, MATLAB, R,

Technologies: Linux/Unix OS from command line, Git version control for collaborative pipeline development on RDS clusters and AWS server. Bash/Slurm scripting for parallel computing.

Agile and Scrum: Industry standard agile systems such as Jira-board for analytics product development. Experience of sprint-planning/review/retro in matrix-management framework

Languages

English, Pashto, Persian, Urdu	(Working fluency)
Arabic and Turkish	(Basic)

Soft Skillset

Communication: Accurate & persuasive with kind and flexible tone.

Writing skills: Highly skilled in summarising publication-standard scientific findings.

Artistic: Pencil sketch and painting.

Driving: Clean UK and International driving license.

Interests: Spending time with family, keeping fit and active.

Leadership: Lead Data Scientist (2020), Elected president of BHAC 2016-2018

IT and Web development: Experienced user of MS Office 365 products such as teams, outlook, word, excel and PowerPoint. Some knowledge of dynamic web development using Django environment in python with postgres and SQL database.

Extra-Curricular Activities:

Freelance Consultant: Consulted mathematical modelling and data science case-studies for projects in agriculture, energy sector and transport.

Private Tutoring: In addition to consulting applied case-studies, I have a provable track record of private tutoring since 2015 in Mathematics, Statistics and Physics.

References:
Available on request.