MOATASIM FAROOQUE

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SKILLS

Engineering Design, Modelling and Optimization

- Thermal Systems design | Combustion Modelling | Finite Element Analysis (FEA) | Computational Fluid Dynamics (CFD) Image Processing | Machine Learning and AI | Multi-objective Optimization | Data Acquisition and Interpretation

Programming Languages, Engineering Software and Mathematical Solvers

- Python | MATLAB | R | Maple | Mathematica | Julia | ANSYS | Microsoft Office | SQL | AWS | GCP | Linux

Management, Leadership and People skills

- Project Management | Supply Chain Management | Product Life Cycle Assessment | Human-factors design

EDUCATION

North Carolina State University (NCSU) Aug 2018 – May 2020

- Master of Science in Mechanical Engineering (CGPA: 3.78 / 4.00)

NUST School of Mechanical and Manufacturing Engineering (NUST) Sept 2013 – June 2017

- Bachelor of Science in Mechanical Engineering (CGPA: 3.25 / 4.00)

PROFESSIONAL EXPERIENCE

Data Science Tutoring – Preply Jan 2024 – Current

- Provided personalized tutoring sessions to help students master Python programming, understand machine learning algorithms, and develop data analytics skills
- Led lessons on statistical analysis techniques, equipping students with the necessary statistical foundations
- Trained students in data visualization best practices, empowering them to effectively communicate insights

Graduate Teaching Assistant – NCSU's Controls Lab Aug 2022 – Aug 2023

- Explained and demonstrated the purpose of the experiment and the underlying concepts
- Helped students troubleshoot their problems
- Evaluated the lab reports and communicated how the technical writing can be improved

Research Data Scientist (AI Motion) – Motive July 2021 – Aug 2022

- Developed algorithms and models to detect close-following events by truckers
- Evaluated metrics to understand performance of ML Models in the field
- Developed end-to-end pipeline for the evaluation of driver distraction models
- Created a dashboard to give complete visibility of current model's performance

Analyst Software Engineer (AI Production) – Afiniti Dec 2020 – July 2021

- Analyzed data feeds from different sources and tailored them according to modelling requirements
- Built and improved machine learning pipelines to maximize client's profitability
- Optimized the performance metric desired by the client

Rig Engineer – Weatherford Drilling International (WDI) Jan 2018 – July 2018

- Prepared work permits for high-risk jobs
- Reported and mitigated unsafe work environments and duties
- Maintained inventory and asset listings in Rig Asset Management System

PROJECTS

- Developed an end to end pipeline to predict Close prices for certain stocks based on timeseries analysis of the historical data and sentiment analysis of the financial tweeter feed
- Carried out a feasibility study of **Moderate or Intense Low-oxygen Dilution (MILD)** combustion and explored its applications toward gas turbine power plants
- Developed an RNN model using IMU sensor data to distinguish between physical activities
- Used Auto Encoders to resolve high-dimensional images of evolutionary fuel combustion
- Implemented NLP-based sentiment analysis to identify contextual hate speech in social media
- Developed a low-cost and portable Carbon Measurement device for the aerosols emitted from pellet-based cook-stoves distributed in African households utilizing the absorption characteristics of carbon by analyzing quartz filters
- Modeled the transport and half-life of transitioning neuropeptides between neurons using flux-based models for the understanding of the effect its deterioration causes in Alzheimer's disease and other neurological disorders

- Calculated the local Nusselt Number of HIT turbine blades utilizing the color changing properties of transient liquid crystals under high temperatures using high speed camera
- Developed a business plan called PlastiEco to market plastic bottles from recycled plastic
- Developed a low-cost and portable **Carbon Measurement device** for the aerosols emitted from pellet-based cook-stoves distributed in African households utilizing the absorption characteristics of carbon by analyzing quartz filters
- Modeled the transport and half-life of transitioning neuropeptides between neurons using **flux-based models** for the understanding of the effect its deterioration causes in Alzheimer's disease and other neurological disorders
- Designed, analyzed, and manufactured a **wet scrubber device**, based on Venturi effect of pressure reduction with the potential aim to decontaminate chemical and particulate emissions from cement industries
- Studied the migration of a micron particle in a **Couette flow** and validated the predictions using simulation in MATLAB
- Designed and Manufactured a **Solar Geyser** and installed it in an underprivileged community in Islamabad Suburbs.
- Calculated the local **Nusselt Number** of **HIT turbine blades** utilizing the color changing properties of transient liquid crystals under high temperatures using high speed camera
- Conducted **CFD Analysis** and performed simulations of a **Catalytic Convertor** and a Converging-Diverging Nozzle using **ANSYS Fluent** Simulation

ONLINE COURSES AND SPECIALIZATIONS

- **Mathematics for Machine Learning**
  Specialization of Imperial College London offered by Coursera
- **Analytic Techniques for Business**
  Specialization offered by Duke University through the platform of Coursera
- **Deep Learning and Neural Networks**
  Specialization offered by DeepLearning.AI through the platform of Coursera
- **Deep Learning in Computer Vision**
  Specialization offered by National Research University Higher School of Economics through Coursera
- **Data Structures and Algorithms**
  Specialization offered by UC, San Diego through the platform of Coursera
- **Google Advanced Data Analytics**
  Specialization offered by Google through the platform of Coursera
- **Introduction to SQL**
  Course offered by DataCamp
- **TensorFlow Developer Professional Certificate**
  Specialization offered by DeepLearning.AI through the platform of Coursera
- **Google IT Automation with Python Specialization**
  Specialization offered by Google through the platform of Coursera
- **Getting Started with Image Segmentation**
  Course offered by Nvidia
- **Introduction to Physics-Informed Machine Learning with Modulus**
  Course offered by Nvidia

AWARDS AND DISTINCTIONS

- **Fulbright Scholarship (US Department of State)**
  Scholarship worth $100,000 for Graduate studies at a US University
- **Merit Scholarship (NUST)**
  Tuition waiver for first semester of undergraduate based on entrance test performance
- **Center for Peace and Development Initiative**
  Selected among 18 community leaders aimed to spread awareness about the legislation “Right to Information”
- **Community Services Learning course (CSL)**
  Awarded certificate of excellence in a project-based course oriented towards community development

REFERENCES

References will be furnished upon request