europass Curriculum vitae

PERSONAL INFORMATION

Mudasir Hanif Shaikh

Old Ravians Society, Gulistan-e-Johar, 75290 Karachi (Pakistan)

+923129955060

ms03831@st.habib.edu.pk

https://www.linkedin.com/in/mudasirhanif/ https://github.com/ms03831

Skype shaikhmudi3@gmail.com

WORK EXPERIENCE

09/2019–Present Student Researcher

Habib University, Karachi (Pakistan)

Our project is an effort towards tackling the challenge of climate change. The project is aimed at predicting air pollution in Pakistan using deep learning methods by using real time meteorological satellite data from NASA as well as some ground variables coming from the sensors that our partner organisation has installed across the country. The ultimate aim is to build a system that could predict air-quality in real-time, something that could be used for better public awareness regarding air quality concerns in Pakistan.
This is an inter-disciplinary research project. I'm leading the team of students working under Dr. Sarah Hasnain and Dr. Abdul Samad of Habib University. Our partner organisation which provides us with the data is Pakistan Air Quality Initiative.

05/2019–08/2019 Research Intern

Department of Computer Science, Habib University, Karachi (Pakistan)

Worked on the project "***Visualisation of Neural Networks***" with Dr. Musabbir Majeed. The idea of the project was to understand the internal working of the neural network, how and what the neurons learn, and to get a better sense of the hyperparameters.

- Implemented different neural networks, loss functions, optimisation, regularisation, and visualisation techniques from scratch in python using only numpy.
- Built the same networks using TensorFlow to understand how the framework works. Built the same architecture in Keras to test our results.
- Implemented the class visualisation technique to understand how and what the neural network learns.
- Tools and technologies used extensively: Python, numpy, matplotlib, TensorFlow, Tensorboard, Keras, Google Colab, Git, and Slack.Supervisors: Dr. Musabbir Majeed and Dr. Abdul Samad

08/2019–Present Project Member

Dhanani School of Science and Engineering, Habib University.

Member of the project 'EE354 on steroids' to redesign the course EE-354 (Probability & Stats) under the supervision of the Program Director, Electrical Engineering.

Supervisor: Dr. Aamir Hasan, Habib University

08/2019–12/2019 University teaching assistant

Department of Computer Science, Habib University, Karachi (Pakistan)

Teaching Assistant for CS 355 - Database Systems.

My responsibilities included:

- Assisting the instructor and students during Lab.
- Consultation and mentoring hours.

01/2019–05/2019

University teaching assistant

Department of Computer Science, Habib University

Teaching assistant for CS-113 Discrete Mathematics.

My responsibilities included:

- Holding tutorial sessions catering to an audience of over 50 students
- Grading and designing homework assignments using LaTeX
- Consultation and mentoring hours twice a week
- Some administrative tasks.

EDUCATION AND TRAINING

08/2017–05/2021

Bachelors in Computer Science with 3 minors

Habib University, Karachi (Pakistan)

- Cumulative GPA: 3.76/4.
- Major in Computer Science along with minors in
  - Mathematics
  - Electrical Engineering
  - Comparative Liberal Studies: History
- Excelled in course-work in Mathematics, Data Science, Machine Learning and Deep Learning.

01/2019–Present

Certifications

Datacamp.com

Completed certified courses in Python programming, R programming, and over 20 courses in Data Visualisation, Analysis, Statistics and Machine Learning using Python and R.

PERSONAL SKILLS

Mother tongue(s): Urdu, Sindhi

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills

- Excellent communication skills gained through my experiences at my University courses.
- Excellent writing skills gained through writing academic papers for courses at my University.

Organisational / managerial skills

- Good team leading skills as I have led many student projects over the last three years. Currently leading a team of students working on a research project.
- Strong work ethic.
- Persistent and Resilient.
- Good time management skills.

Job-related skills

Tools and Technologies:

Programming:

- **Advanced (over 5000 lines):** Python, C++, C, LaTeX
- **Intermediate (over 1000 lines):** C#, R, Shell Scripting (Bash), JavaScript, MATLAB

- **Novice (less than 1000 lines):** Verilog HDL, Java

Development: HTML, CSS, JavaScript, jQuery, Ajax
Development Frameworks: .NET MVC, Django, .NET Windows Forms (Desktop)
Databases: SQL Server, sqlite
Machine Learning Frameworks: TensorFlow, Keras, Apache MXNet
Others: SDL 2.0, matplotlib, sk-learn, seaborn, numpy, tkinter, pandas.

Other Industry-related knowledge:
Machine Learning, Data Visualisation, Geometric Modelling, Numerical Analysis, Computer Vision, Database Design & Management, Data Structures & Algorithms, Computer Architecture, Academic and report Writing, Microsoft Office.

ADDITIONAL INFORMATION

Courses

Artificial Intelligence, Data Science, Deep Learning, Computer Vision, Robotics, Operating Systems, Object Oriented Programming and Design Methodologies, Probability Theory, Statistics, Database Management Systems, Advanced Data Structures, Design and Analysis of Algorithms, Geometric Modelling, Numerical Methods, Unix Tools and Scripting, Computer Architecture, Dynamic Programming, Advanced Differential Equations,

Honours and awards

- **Dean's Honor List – Fall, 2019**
- **President's Honor List – Fall, 2019**
- **Dean's Honor List – Spring, 2019**
- **HU TOPS Scholarship – 2017 - 2021:** Recipient of the HU-TOPS merit scholarship which is a full academic scholarship for the entirety of my four years studies at Habib University

Community Involvement & Activities

- **Maths Instructor** (2019 - Present) – Wujood, Adult Literacy Program for the care taking staff by SerVe club at Habib University, Karachi.
- **Volunteer** – Memon Medical Complex, Karachi (Summer, 2018)
- **Event Lead – Speed Programming**, Code.Play('3.0') - Habib University's flagship annual programming event.
- **Teaching Assistant** (2018 - Present) – Have been involved with the teaching staff to help students with the problems they face in their courses at Habib University.
- **Member of Societies** - SerVe, Brain.Hack() ACM Chapter, HU Artificial Intelligence Club

Projects

- Predicting Air Pollution in Pakistan using Deep Learning (2019 - Present) – Analysis of Pakistan's Air quality data using deep learning methods.– Compared different methods and used different architectures (such as MLP, LSTM, GRU).– Working on improving our models, integrating real-time cloud data coming from sensors installed across Pakistan.– Working on incorporating meteorological data coming from NASA's satellite data
- Visualisation of Neural Networks (2019)– Understanding and visualizing neural networks.– Tools used extensively: Python, numpy, matplotlib, Tensorflow, Tensorboard, Keras, Google Colab, Slack, Trello and Git.
- Humraah (2019)– A web-based application allowing a user to book nearby ambulances. Built on ASP .NET MVC with SQL Server as Database. – Tools and technologies used extensively: ASP .NET MVC, C#, Razor, HTML, CSS, Javascript, jQuery, Git.
- Analysis of the College Scorecard Data by U.S. Dept. of Education (2019) – Tools used: Python, matplotlib, sci-kit learn, numpy, pandas, LaTeX, git.
- StuTor (2018 - 2019)– A web-based application following a model similar to Uber's that looks for the nearest tutor when requested by a student. Built on Python's Django with sqlite database.– Tools and technologies used: Python, Django, HTML, CSS, jQuery, JavaScript, sqlite
- Paasban-e-Zafar - A game in historical fiction (2018)– An interactive game made using C++ and SDL. The idea of the game was to promote the history of subcontinent by relishing a historical moment which changed the course of the subcontinent forever.
- Comparative analysis of Rule based systems, Bayesian Networks and Machine learning techniques for Evaluating risk of CHD (2019)

- Conversion of Meshes into Bezier Curves and Surfaces using Python (2019)
- Finite Element Solver (2019)
- Sentiment Analysis (2018)