URWA MUAZ

Linkedin
urwa.muaz@nyu.edu

Education

New York University CUSP — 2018-19
- Enrolled in Master of Science in Applied Urban Science and Informatics

University of Engineering and Technology, Lahore — 2012-2016
- BS in Electrical Engineering with concentration in Computer Science.
- CGPA: 3.5
- Relevant Courses: Data Mining, Intro to Artificial Intelligence, Applied Probability & Statistics, Linear Algebra, Scientific Computing, Database Engineering, Computer Architecture, Operating Systems, Data Structures, Programming Fundamentals, Software Engineering.

Grand Valley State University(US) — Aug-Dec 2014
-Exchange student and Cultural Ambassador in USA for a semester.

A Levels: 3 A Stars — 2009
O Levels: 11 A's — 2011

Achievements

Fulbright Foreign Students Program Awardee — 2018
Fulbright grant will cover the cost of my Master Program at NYU CUSP.

Bronze Medal in 42nd International Physics Olympiad, Thailand — 2011
It is an annual global physics competition for secondary school students. I was selected in top 5 students to represent country after nationwide screening. About 90 countries and 400 contestants participated in Olympiad.

Cultural Ambassador to United States — Aug-Dec 2014
-Development of social entrepreneurial and cross-cultural skills.
-Community service, cultural presentations & teambuilding workshops.

Cambridge Outstanding Achiever Award: — 2009
- Top in the World in Combined Science O-Levels

Edexcel High Achiever Certificate: — 2011
- Top in the Country in Human Biology O-Levels

Experience

Confiz Limited: Software Engineer (Data Science) — Jun2016 -Present

Retail Price Recommendation Engine:
The project was built in Azure Machine Learning Studio, and it consisted of three components.
- Product level demand is forecasted using Boosted Decision Tree model trained on 4 years of historical sales data.
- Product level Price Elasticity is calculated using linear regression on historical data.
- Linear Programming uses above information to recommend optimum product level price that maximizes gross profit.

Software Stability Prediction

Bayesian Linear Regression model was trained in Azure ML Studio. It predicted the software failure events from pre-deployment software features logged in Jira.

Customer Behavior Analytics from video stream (YOLO, Open CV, Python)
System generates analytics like Heat map, dwell time and customer paths form raw camera streams. Stream is processed to store the path of all customers, processing consists of two modules:

- Human Detection: YOLO v2 is used for detection. It is a real-time object detection system based on convolutional neural networks. Pretrained weights are used for detection of humans in each frame.
- Human Tracking: Kalman filter is used to predict the motion of people in the next frames and Hungarian algorithm is used to assign detections to people. A custom tracker which also incorporates entry/exit points and bounding box sizes is being developed.

Repeat Customer and Gender Analysis (OpenFace, Python, SQL)
A software on the edge reads the video stream and performs following operations:

- Face Detection using Dlib
- 128 dimensional Face Encoding generation using Open Face
- Gender classification using pretrained KNN classifier
- Face recognition based on Euclidean distance matching

Data is then dumped in an SQL database residing on server, on top of which insight reporting is performed.

Business Intelligence Dashboard Solution (Power BI, Azure SQL, SSIS)
I worked on data integration where I developed SSIS packages to export data from Microsoft Dynamics AX to our data warehouse. Furthermore, I developed interactive dashboards of this data on Microsoft Power BI.

App Usage analytic for Macys (Telerik, Azure Mobile Engagement)
App usage data was exported from azure mobile engagement into custom warehouse and custom reporting dashboards were built on top of it using Telerik UI tools.

SAS based BI product for retail store performance management (.Net, SQL)
I worked in a team that developed the reporting .Net MVC web application and data connectors that integrate data from heterogeneous point of sales systems and traffic counting devices in near real time.

Certifications

Deep Learning Specialization Coursera (certificate**)**
This specialization consisted of five courses delivered by Andre NG. Courses were Neural Networks and Deep Learning, Improving Deep Neural Networks, Structuring Machine Learning Projects, Convolutional neural Networks and Sequence Models.

Microsoft Professional Program for Data Science (link)

- Courses Audited: Introduction to Data Science, Analyzing and Visualizing Data with Power BI, Introduction to R for Data Science, Data Science Essentials, Principles of Machine Learning, Applied Machine Learning.
- Microsoft Certified Professional Capstone Project Data Science(certificate) Loan-granting binary classification in azure ml studio.

Research & publications

Center of System Simulation and Visual Analytic Research: **Research Intern** — **Feb-Dec 2015**

Project: Simulation Model for Counter Measures Against Aedes Aygept

My task was to develop a discrete time agent-based simulation to model dengue transmission and dengue control measures for the city of Lahore. This simulation could aid the health official in response planning by providing spatio-temporal monitoring of dengue occurrence and what-if analysis of employing countermeasures such as insecticide spray. The work was later published in "Frontiers of Information Technology, 2015" (DOI: 10.1109/FIT.2015.27)

Biomedical Informatics Research Lab, LUMS: Research Assistant — **Jun-Aug 2014 & Aug 2015 - Present**

Project: High Performance Protein Search Engine (Final Year Project)

My first task was to program "peptide sequence tag (PST) module" (de novo) and develop the backend of the search engine as a .Net Web API. My second task was to leverage high-performance computing to improve the execution time. I utilized data parallelism in selected routines by implementing them on GPU using NVIDIA's CUDA toolkit, which improved execution times by one order of magnitude on our datasets. My third task was to explore the effect of dataset size on the comparative performance of our GPU and CPU implementations. Our research was ranked amongst top three in the "Final Year Project Exhibition 2016", organized by Department of Electrical Engineering, UET.

Social Service

Project Smile: Founder and President — **2016-Present**

Provides basic IT education and programming training to underprivileged orphans who have limited or no access to computers. More than 100 children from four orphanages have received training.

- IREX applauds Project Smile - Featured article about Project Smile

STEM5: Volunteer Science Teacher — **2015-2016**

Taught science to grade 4 students in neglected primary schools.

Sports

- Member Cricket Team UET Lahore
- Member Field Hockey Team UET Lahore
- Captain Cricket Team Bloomfield Hall School