Md Nuruddin Pathan

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Research Interests

Cloud Cumputing Securty, Big Data Security, Cloud Cryptography, Privacy in Multi-tenancy Clouds, Machine Learning, Natural Language Processing,

Education

Winter 2015 – Winter 2019 **BSc in Computer Science** | *International Islamic University, Malaysia*
Major GPA 3.92/4.00
Overall 3.64/4.00

Publication

2017 Tajwar, M. M., Pathan, M. N., Hussaini, L., and Abubakar, A. (2017). CPU Scheduling with a Round Robin Algorithm Based on an Effective Time Slice. *Journal of Information Processing System, Vol 13, (2017) No.4.*

Experience

June 2018 – January 2019 **Schlumberger, Share Service Organization** | *Kuala Lumpur, Malaysia*
Data Analyst Intern, D&A

Contributed and actively worked on the design architecture and development of ELT solution to migrate 2TB of SSO D&A on-premise SQL Server data to **Azure Data Warehouse** by leveraging ADF. Created several **SSIS** packages to automate ETL processes. The SSIS packages are mostly written in **C#** with other tools to perform the designated task.

April 2019 – Present **Schlumberger, SSO D&A** | *Kuala Lumpur, Malaysia*
Data Engineer

- **HR Confidential Data Project** – Initially, data was coming in encrypted format from Azure Blob Storage. I developed a C# .NET console app to download the data from blob into VM and decrypt it with the use of CMD, afterward another script to convert Excel to CSV(Cause at this point ADF does not support Excel), and uploaded back to the blob storage, which is secured by VNET(Azure Virtual Network), lastly some housekeeping on the VM. The decrypted data was later pushed to Azure SQL DB using an ETL pipeline using the ODBC Linked Service connection string. Another layer of protection imposed to the Azure SQL DB using Azure Key Vault with the Always Encrypted feature for encryption/decryption of data at the row level.
- **Azure Batch service** with serverless architecture for parallel file processing and high-performance computing (HPC) workloads at runtime.
- **Data Automation** depending on the requirement from the Product Owner, either using SSIS or Alteryx workflows**.** Collected the data from the source, developed the ETL flow afterward, validated the data, did the UAT, and deployed to the Production environment. I also worked on Azure Automation Account to automatically trigger scripts on Hybrid VM's for background task processing.

- **Data migration** from on-premises SQL Server Data Center to **Azure Data Warehouse (Azure Synapse).** Build the ELT pipeline Framework using Azure Data Factory (ADF) leveraging PolyBase feature with BI tools for faster performance of bulk load, which is currently being used by the company.
- **Azure WebJob and Functions:** Build API to trigger Alteryx Workflows from Azure Data Factor using WebHook Activity that are written in **C#**. 40-50 developers are using the API in the D&A department.
- **Automated** Alteryx workflow migration from QA to PROD environment, which is getting triggered from Azure Function App with CI/CD implemented in Azure DevOps.

May 2020 - Present **Fiverr Freelancing**

- Developed serverless encoding solution in azure that takes 4k-8k resolution raw footage, breaks them in chunks and separately process them with AV1 encoder in 100 containers, after the processing is done it merges back the transcoded files in compressed file-format for the greater web-streaming experience.
- Azure solution built on Python that retrieves Doctor's followers and their tweets to analyze data in PowerBI Report. Getting 250k follower's data from twitter was a challenge as twitter imposes strict rate-limit on followers/list endpoint with a 15 list per 15 min timeframe.
- Built numerous ADF pipelines with different level of requirement and difficulties.
- Consulted clients to solve challenges with developing solution in Azure Cloud Environment.

Teaching Assistant, Department of Computer Science, IIUM

Fall 2017 – Summer 2018 **CSC 1100 | Elements of Programming**

Conducted 2 weekly tutorial classes for 2 hours each, demonstrated the implementation of basic coding constructs in C++. Each class consisted of 30-40 students. Each week took one test which was consist of 10 marks, in total 6 tests were conducted.

Selected Projects

2017 **Movie Recommendation Engine**

Developed and evaluated a Used Based Collaborative filtering model (UBCF) system for recommending movies which was implemented with R language. The collaborative filtering approach is stronger than what a item-based recommender can provide as users might not be looking for direct substitutes to a movie they had just viewed or previously watched.

2016 **Missing Value Imputation using Supervised Learning Algorithm**

Compared to the effectiveness of Linear Regression, kNN & support vector Machine to predict missing values in a variable-sized dataset. The imputation from kNN gives near to accurate prediction than the other two. The results are compared in terms of MAE, RMSE, RSE and Wilcoxon test. Datasets were collected from the Kaggle website which was of around 4k rows. The coding part was done in both R and Microsoft Azure ML. For the Visualization, we used the Microsoft PowerBI tool.

2016 **Food Ordering System**

A Java application to order food based on the menu set inside the program. The database is built on MySQL to store and retrieve the information. A simple GUI is used to interact with the user. The system can be used for any normal boutique to order any menu.

Awards & Certification

2019 **ITIL**

Foundation Certificate in IT Service Management

2015-2018 **Dean's List** | *Department of Computer Science, IIUM*
Seven Semesters

2017 **IIUM Code Jam** | *International Islamic University, Malaysia*
Champion – Team Tyros

It is an onsite programming competition held every year in IIUM. Around 10-12 teams participate from ICT and Engineering departments. The contest was 5 hours long consisting of 8 problems. The contest follows the same ACM ICPC rules.

2017 **Unicode Programming Competition** | *Monash University & School of UOW in INIT*
Participant

More than 50 teams from various universities participated. The contest had 3 rounds, 3 hours each, with increasing difficulty. This contest had been a different experience because like other contest this contest also had 9 questions but a shorter timespan to think for each problem rather than the usual 5-hour contest.

2016 **ACM ICPC Malaysia** | *Al Khwarizmi National Programming Competition*
Honorable Mention (18th ranking out of 53 teams) – (Team Muharram1438)

A yearly competition between all the universities in Malaysia. Where the best competitive programming teams participate. We managed to solve 4 problems out of 9 problems.

Technical Skills

Languages	C#, C/C++, Python, Java, JavaScript, R
Frameworks & Libraries	NumPy, Seaborn, Pandas, PowerBI, SSIS, Alteryx
Deployment	Git, Docker
OS	Linux(Ubuntu), Windows
Cloud Computing	Microsoft Azure

Extra-curricular Activities

2015-2016 **Ummatic Festival** | *Islamic International University, Malaysia*
Winning Country

It is a one-week cultural performance festival. The various country performs their cultural dance, drama, melodrama and singing to represent the culture of their country.

2015-2016 **IIUM Bangladesh Community**
Volunteer, **Organizing Committee**

Others

Citizenship Bangladeshi

Referees

Dr. Imad Fakhri Taha Alyaseen
Professor of Computer Science
Kulliyyah of ICT, IIUM
imadf@iium.edu.my

Dr. Normaziah Binti Abdul Aziz
Associate Professor of Computer Science
Kulliyyah of ICT, IIUM
naa@iium.edu.my

Dr. Amelia Ritahani Ismail
Associate Professor of Computer Science
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amelia@iium.edu.my