Shah Hassan

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Experience

Graduate Research Assistant, *University of Central Florida* *09/2018 – Present*

- **Poster (Performance Consideration while Protecting from Side Channel Vulnerabilities):** Highlighted the performance slowdown of Constant-Time Expression (CTE) using some state-of-the-art algorithms including Fibonacci, Ones, Queens etc. CTE reduces the performance by up to 180 times.

Software Engineer, *Afiniti Software Solutions* *07/2015 – 06/2018*
Data Science and Engineering Teams

- Designed and implemented a Generic Data Pipeline on **MySQL** to prepare AI modelling data for 50 different clients with different data protocols.
- Implemented ETL jobs using **Talend** and **SSIS Packages** and reduced transformation completion time by 10 times.
- Collaborated with a team of Software Engineers to develop a large code base of development of production monitoring software (Clientbook) using Entity Framework **(ASP.NET C#)**
- Developed Machine Learning Recommender models using **R** and **MySQL** to optimize agent-caller pairing leading to increase in Revenue of Contact Center by 15%.
- Developed all data warehouse models, drafted ETL scripts and prepared required reports for all end users.
- Collaborated with a team Software Engineers to develop a code base development of AI Model Data Manipulation tool on **.NET**.
- Developed an automated email Alert on **Python** to get statistical performance data to monitor performance of the model.

Software Engineer, *Primatics Financial* *04/2015 – 06/2015*
Development Team

- Tested the Cash Flow and Loan Valuation processes of the Software "Evolv" via unit tests in **Java**.
- Contributed to End to End **Bash** Code to smoothly pipelining the processes of in-house software "Evolv".

Languages and Tools

C/C++	Python	Java	R	MATLAB	C#	SQL
Talend	SSIS	Gem5	Latex	Git		

Education

University of Central Florida
M.S in Computer Science *09/2018 - 04/2020*

Courses: Design and Analysis of Algorithm, Current Topics in Machine Learning, Fundamental of Secure Execution Environment, Advanced Computer Architecture, Malware and Software Vulnerability Analysis, Incident response Technologies, Computer Forensics

Lahore University of Management Sciences
B.S in Computer Science *09/2010 - 12/2014*

Courses: Data Structures in C++, Computer Vision, Computer Graphics, Applied Probability, Network-Centric Computing, Databases, Discrete Mathematics

University of Louisiana at Monroe
Exchange Student *Spring 2012*

Projects

- **Improving the accuracy of Deep Neural Network by adding bias from Heatmapping values:** Extended the paper "Evaluating the Visualization of What a Deep Neural Network Has Learned" and used differences in slope of AOPC values as a bias in retraining the network in order to influence the network to have improved accuracy. Implemented the code using Pytorch in **Python**.
- **Behavior of Web-like Networks:** Analyzed the behavior of web-like network using the methods discussed in paper 'Preferential deletion in dynamic models of web-like networks'. Implemented the code in **Python**.
- **Not Another Completely Heuristic Operating System (NachOS):** Implemented the missing components of NachOS such as semaphores, locks, conditional variables, address space, system calls etc. in **C++** and ran manual programs such as sorting on this platform as a course project for Operating Systems.
- **Analysis of Deeplabv3+ on MSCOCO 2017 Dataset:** Analyzed the behavior of Deeplabv3+ as we alter the density of Spatial Pyramid pooling and we add additional skip connection from Atrous convolution to Decoder. Implemented the code using Pytorch in **Python**.