

Hafiz Asif

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EDUCATION

Rutgers, The State University of New Jersey	2014-present
PhD Student, Concentration: Information Technology	GPA: 3.9
Lahore University of Management Sciences (LUMS)	2010-14
Bachelor of Science, Major: Computer Science	GPA: 3.5

PROFESSIONAL EXPERIENCE

Center for Information Management, Integration and Connectivity at Rutgers Newark

I'm working on projects related to collaborative data analytics, data/computation outsourcing, and data mining under supervision of Dr. Jaideep Vaidya and Dr. Nabil Adam.

Teaching Associate

- **Rutgers, The State University of New Jersey** 2014-
Data Warehousing, Programming & Web App. and Databases, Product Operational Mgmt.
- **Lahore University of Management Sciences** 2012-14
Operating Systems, Advanced Programming, C++ Programming, and Calculus.

Research Associate

- Worked with Dr. Basit Shafiq on building a system that recommends workflows for business process based on the insights gained through machine learning and data mining perform in a collaborative manner on the logs of business processes already deployed in industry.

Sales Pitch for USAID Energy Efficient Water Pump Program

2011

- After market research, focus group studies, and financial analysis, while leading a team of three, I developed and delivered a sales pitch to persuade USAID certified vendor for energy efficient pumps to include USAID program for installing energy efficient pumps in their advertisement and marketing.

RESEARCH PROJECTS

A theoretical and comparative analysis of multi-class classification models based on linear binary classifiers (working paper): we are mathematically analyzing the efficiency of multi-class classification models such as one-versus-one, one-versus-all, and error correcting output codes, which use linear separators as the base classifier. Although there are many empirical studies with contrasting results, we are interested in answering this question from a definitive theoretical perspective.

My work published in IFIP SEC'17, focuses on the finding record of interest especially from the perspective portfolio's structure. We proposed a way to efficiently query similar records (portfolios) based on the structure of the query in a collaborative fashion. We also try to minimize the unnecessary information leakage for the querier and the records holders.

My work was published in IEEE CIC'16, where our focus was to enable collaboration to solve problems such as fraud detection in financial transaction or insurance claim. This results in more accurate assessment of label (fraud/legitimate) of transaction; consequently, it improves customers' experience and risk management.

My work was published in CCIS'16: our work enables organizations to generate an executable business process (BP) from high level design specifications by exploiting the knowledge of existing BPs of related organizations in a collaborative manner. We also validated the proposed system through an implementation.

Kinect depth improvement (Internship at LUMS): I built ground truth for human 3d point structure detected by Kinect through combination of the output of three Kinects. I performed experiments for comparing our proposed algorithms based on discrete cosine transformation to that of the Kinect's for depth detection map.

DEVELOPMENT PROJECTS

Map Reduce Based Distributed SVM

2013

- Adapted sequential minimal optimization to produce a distributed version for building SVM in Map Reduce framework, while employing user's feedback and ontology to improve prediction.

iLums (Google Map based Android App for LUMS) 2012

- Leading a team of four developed an android app with indoor navigation, positioning and route finding capabilities. We manipulated Wi-Fi data for indoor positioning and used custom indoor maps.

Control Flow Graphs & Symbolic Execution 2012

- Built java apps for CFG generation and symbolic execution of java programs at byte-code level.

Programming Projects 2012-14

- Programmed remotely accessible distributed file system with several read-write consistencies.
- Built various OOP based apps. including P2P Chess, Event Manager and Library Portal.
- Developed a complete engine for Artificial Intelligence coding competition for Bomber man game.
- Using AJAX, java script and PHP implemented a web-based application that replicates the functionality of DBLP database system for over 6 million entries.

SUZZAIN1314: Hardware implementation of 8-bit Processor 2013

- Leading a group of four, designed and built an 8-bit processor, its language and assembler.

Nachos Implementation 2012

- Implemented Multi-programming support, concurrency module, priority scheduling, system calls, file system etc., for Nachos operating system.

Interactive Simulator for Frictionless Gravity based Systems 2010

- Developed a software in MATLAB that can simulate gravity based systems for frictionless and energy conservative environment: it supports creation of objects and render their interactions.

HONORS & AWARDS

- Won Travel Grant for IEEE CIC'17. 2016
- Got fully funded Grad admission in Rutgers Business School (RBS). 2014-
- I was awarded Dean's Honor at LUMS. 2011-12
- Recipient of competitive **NOF, BAF and PEEF Scholarships** awarded by LUMS and state. 2009-14
- Nation-wide **1st position** in entrance test of **GIKI & PIEAS**, leading Pakistani universities. 2010
- Held 4th Position in **All Pakistan Debating Competition**. 2008

EXTRA-CURRICULAR INFORMATION

- **President of Debating Society** at Govt. S.E. College & Govt. Technical H.S. 2009-10
- City representative of Office of Children Facilitation (**Funded by UNICEF**). 2008-09
- **Event Head** Coding Conquer AI Challenge, **Director IT** for SPADES and LDS, student organizations.
- **Volunteered for social-welfare works**: computer training workshops for blue collar staff, collected donations for flood relief in Sindh, Pakistan; **mentored students** of under-developed areas.
- Deliver motivational speeches for underprivileged school & college students in villages and cities.

OTHER RELEVANT INFORMATION

- Apt at programming in Java, MATLAB, R, python, C++, C#, PHP.
- Working knowledge of Android API, SQL, Google Maps API, SMC systems Fair-play and Fast GC.
- Windows and Linux, Weka, Flask, Ruby on Rails, GitHub, My SQL, Oracle Database 11g.

REFERENCES

1. *Dr. Jaideep Vaidya*, Dean's Research Professor, Rutgers University.
2. *Dr. Nabil Adam*, Distinguished Prof. and Vice Chancellor for Research & Collaborations, Rutgers University.
3. *Dr. Periklis Papakonstantinou*, Assistant Professor, Rutgers University.