

USAMA NASEER

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EDUCATION

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|---|-------------------------------|
| Brown University – Providence, RI, U.S.A | August 2017 - present |
| <ul style="list-style-type: none">• Ph.D. in Computer Sciences• Networks and Systems – Advisor Dr. Theophilus Benson | |
| Duke University – Durham, NC, U.S.A | August 2016 – August 2017 |
| <ul style="list-style-type: none">• Ph.D. in Computer Sciences | CGPA–3.75/4.0 |
| Lahore University of Management Sciences – Lahore, Pakistan | May 2016 |
| <ul style="list-style-type: none">• B.Sc. in Computer Sciences | CGPA–3.52/4.0, SCGPA–3.64/4.0 |

AWARDS AND DISTINCTIONS

- Placed on Dean’s Honor List for years 2012-13, 2013-14, 2014-15.
- Awarded *Silver medal* and *Certificate of Merit* by Board of Intermediate and Secondary Education for 2nd position in Pre-Engineering Higher Secondary Grade exams (out of more than 100,000 students) in 2012.

PUBLICATION/POSTER

- Usama Naseer, Theophilus Benson
Configtron: Tackling network diversity with heterogeneous configurations.
Presented paper at the 9th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud 2017) in Santa Clara, CA.
- Usama Naseer, Theophilus Benson
InspectorGadget: Inferring Network Protocol Configuration for Web Services.
Presented poster at IMC 2017 in London, U.K.

SELECTED PROJECTS

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| ConfigTron | Sep 2016–Present |
| <ul style="list-style-type: none">• Improving network performance by reconfiguring network stack according to the user needs using a data-driven reconfiguration approach.• ConfigTron infers network conditions faced by user and predicts a set of optimal network stack configurations for the user, using machine learning techniques.• Developed a prototype for ConfigTron and carried out controlled and in-the-wild experiments to quantify the benefits of reconfiguring network stack. | |
| InspectorGadget | May 2017–Present |
| <ul style="list-style-type: none">• Inferring network protocol configuration (TCP, TLS, HTTP) for web services by live probing and reverse engineering.• A survey of major web servers and analysis of their current configuration parameters and understanding the implications of these parameters. | |
| Collusion Networks – OAuth 2.0 exploits in Facebook applications | 2015–2016 |
| <ul style="list-style-type: none">• A study of inorganic activity on Facebook under the supervision of Dr. Zubair Shafiq (UIowa) and Dr. Fareed Zaffar (LUMS). Exposes the activity of malicious entities that generate fake activity using a system of willing users (collusion networks).• Collusion networks exploit Facebook application’s read/write permissions to collaborate user activity. The process is quid pro quo, users who enroll these services get likes/comments on their pages/posts, and their accounts are used to like/comment on other users’ pages/posts. I was also responsible for data collection using honeypots, reverse engineering the architecture of collusion networks and identifying security vulnerability. | |

Semantic Cleaning of Textual Dataset

Spring 2017

- Identification of duplicates in Quora's Q&A data set.
- Leveraged tools like word2vec and doc2vec to analyze textual semantics for feature extraction.
- Used machine learning strategies (random forests, SVM, neural nets) to detect deduplication in data set.

Visualization of primary school examination results

Summer 2015

- Developed a web application for public high schools' examination results analysis and visualization of schools' data on Google maps in collaboration with Punjab Examination Commission and Center for Governance and Public Management, LUMS (USAID funded).

Automating medical report generation from lady health workers

Spring 2015

- Worked in collaboration with Technology for People's Initiative lab (Google-funded) at LUMS to automate medical report generation for children vaccinations.
- Developed a web-based portal to replace paper-based data collection by lady health workers.

Distributed Password Cracker

Spring 2015

- Scalable, fault-tolerant distributed password cracker running on a cluster having four processing cores. Uses brute-force algorithm.

COURSE WORK AND SKILLS

Programming languages and tools:

Python, Java, C/C++, tensorflow, Scala with Akka actors, PHP, SQL, Mahimahi, Selenium, MATLAB, AWS, tcpdump, wireshark, raw sockets, gnuplot, latex

Selected course work:

Deep Learning, Software Defined Infrastructure, Distributed Systems, Network-Centric Computing, Advanced Operating Systems, Data Mining, Network Security, Data Cleaning and Integration, Artificial Intelligence, Design Patterns

WORK EXPERIENCE

- Research Assistant of Dr. Theophilus Benson at Brown University 2017-present.
- Research Assistant of Dr. Theophilus Benson at Duke University 2016-17.
- Research Assistant of Dr. Fareed Zaffar at LUMS. Worked in network security research.
- Intern at Punjab Examination Commission, Lahore (June-August 2015)
- Teacher's Assistant for Databases course (Fall 2015), Algorithms (Spring 2015) and Calculus-1 (Fall 2014)