

# MUHAMMAD ABDULLAH

Punjab University College of Information Technology

University of the Punjab, Allama Iqbal (Old) Campus, The Mall Road, Lahore, Pakistan.

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## EDUCATION

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**Ph.D Computer Science** *2016 - Present*  
**University of the Punjab, Lahore, Pakistan**  
Advisor: Dr. Waheed Iqbal  
Thesis Topic: "Performance-aware Cloud Resource Management for Microservices-based Applications"  
(Thesis under submission)

**M.Phil Computer Science** *2014 - 2016*  
**University of the Punjab, Lahore, Pakistan** **CGPA: 3.78**  
Advisor: Dr. Waheed Iqbal  
Thesis Topic: "Autoscaling of Multi-tier Web Application Hosted on Virtual Machines and Containers"

**BS Computer Science** *2010 - 2014*  
**University of the Punjab, Lahore, Pakistan** **CGPA: 3.74**

**Intermediate, F.Sc (Pre Engg.)** *2018 - 2010*  
**BISE, Lahore, Pakistan** **Grade: A**

**Matriculation** *2010 - 2014*  
**BISE, Lahore, Pakistan** **Grade: A+**

## RESEARCH INTERSESTS

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Cloud Computing, Scalable Applications, Microservices, Docker Containers, Distributed Computing, Machine Learning and Private Cloud Development.

## JOURNAL PUBLICATIONS

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1. **Abdullah, M.**, Iqbal, W., and Erradi, A. (2019). "Unsupervised learning approach for web application auto-decomposition into microservices." *Journal of Systems and Software* 151 (2019): 243-257. **ImpactFactor=2.559**
2. **Abdullah, M.**, Khan, S., Alenezi, M., Almustafa, K., and Iqbal, W. (2018). "Application Centric Virtual Machine Placements to Minimize Bandwidth Utilization in Datacenters". *Intelligent Automation and Soft Computing*, 114. **ImpactFactor=0.652**
3. Iqbal, W., Erradi, A., **Abdullah, M.** and Mahmood, A. (2019) "Predictive Auto-scaling of Multi-tier Applications Hosted on Performance Varying Cloud Virtual Machines". *IEEE Transaction on Cloud Computing*. **ImpactFactor=5.967**
4. **Abdullah, M.**, Iqbal, W. "Predictive Autoscaling of Microservices Hosted in Fog Micro Data Center". *IEEE Systems Journal*. *under review* **ImpactFactor=4.463**
5. **Abdullah, M.** and Iqbal, W. "Burst-Aware Predictive Autoscaling for Containerized Microservices". *IEEE Transaction on Services computing*. *under review* **ImpactFactor=5.707**

## CONFERENCE PUBLICATIONS

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1. **Abdullah, M.** and Iqbal, W. Erradi, A. and Bukhari, F. "Learning Predictive Autoscaling Policies for Cloud-hosted Microservices Using Trace-driven Modeling" Accepted in 11th IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2019).
2. **Abdullah, M.**, Iqbal, W., and Bukhari, F. (2018, October). Containers vs Virtual Machines for Auto-scaling Multi-tier Applications Under Dynamically Increasing Workloads. In International Conference on Intelligent Technologies and Applications (pp. 153-167). Springer, Singapore.

## WORK EXPERIENCE

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### Lecturer (BPS-18)

October 2019 - Present

*PUCIT, University of the Punjab, Lahore, Pakistan*

Taught courses from computer science and software engineering domain to BS and M.Sc levels.

| Term      | Level | Subject               | Sections |
|-----------|-------|-----------------------|----------|
| Fall 2019 | BS    | Analysis of Algorithm | One      |
| Fall 2019 | BS    | Computer Architecture | Two      |

### Research Assistant

August 2015 - October 2019

*CloudNet Lab, PUCIT, University of the Punjab, Lahore, Pakistan*

### Visiting Lecturer

August 2014 - October 2019

*PUCIT, University of the Punjab, Lahore, Pakistan*

Taught courses from computer science and software engineering domain to BS and M.Sc levels.

| Term        | Level | Subject                                 | Sections |
|-------------|-------|---|----------|
| Spring 2019 | M.Sc  | Analysis of Algorithm                   | Two      |
| Fall 2018   | BS    | Analysis of Algorithm                   | One      |
| Fall 2018   | BS    | Object Oriented Programming             | Two      |
| Fall 2017   | BS    | Object Oriented Programming             | One      |
| Fall 2017   | BS    | Computer Org. and Assembly Language     | Two      |
| Spring 2017 | M.Sc  | Analysis of Algorithm                   | Two      |
| Spring 2017 | BS    | Object Oriented Programming             | Two      |
| Fall 2016   | BS    | Computer Org. and Assembly Language     | Three    |
| Fall 2016   | BS    | Computer Architecture                   | One      |
| Spring 2016 | BS    | Computer Architecture                   | Two      |
| Spring 2016 | BS    | Digital Logic Design                    | Two      |
| Fall 2015   | BS    | Computer Org. and Assembly Language     | Three    |
| Spring 2015 | BS    | Computer Architecture                   | Two      |
| Spring 2015 | BS    | Discrete Mathematics                    | Two      |
| Fall 2014   | BS    | Programming Fundamentals                | Two      |
| Fall 2014   | BS    | Computer Org. and Assembly Language Lab | One      |
| Summer 2014 | BS    | Programming Fundamentals                | Two      |
| Summer 2014 | BS    | Computer Org. and Assembly Language Lab | One      |

### Visiting Lecturer

October 2016 - July 2017

*Qarshi University, Lahore, Pakistan*

Taught courses from computer science and software engineering domain to BS levels.

| <b>Term</b> | <b>Level</b> | <b>Subject</b>              | <b>Sections</b> |
|-------------|--------------|-----------------------------|-----------------|
| Fall 2016   | BS           | Cloud Computing             | One             |
| Fall 2016   | BS           | Web Engineering             | One             |
| Spring 2016 | BS           | Cloud Computing             | One             |
| Spring 2016 | BS           | Object Oriented Programming | Two             |

## **ACADEMIC ACHIEVEMENTS**

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- Got 1<sup>st</sup> prize in programming competition held by Computer Society, PUCIT, University of the Punjab.
- Got three times merit scholarship at BS level.
- Secured first position in M.Phil Entry Test Exam at PUCIT, University of the Punjab.
- Secured first position in Ph.D Entry Test Exam at PUCIT, University of the Punjab.
- Got scholarship for maintaining above 80% average throughout the academic career at school level.

## **TECHNICAL SKILL SET**

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- **Programming Languages** C, C++, C#, Java, Python
- **Web Development** HTML, CSS, Java Script, ASP.Net, JSP
- **Operating Systems** Linux, Windows
- **Tool and Services** Amazon web services (AWS), OpenNebula Cloud Platform, Docker, Docker Swarm

## **PERSONAL TRAITS**

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- Highly motivated and eager to learn new things.
- Strong motivational and leadership skills.
- Ability to work as an individual as well as in group.