

# Mian Muhammad Mubasher

Soft Copy



<http://goo.gl/lqAhPk>

Short Version of CV



<http://goo.gl/AoA4g0>



**CONFIDENTIAL**

[mubasher@pucit.edu.pk](mailto:mubasher@pucit.edu.pk)

[mian.muhammad.mubasher@gmail.com](mailto:mian.muhammad.mubasher@gmail.com)

<http://about.me/mian.muhammad.mubasher>

## Objective

I am a researcher and academician. My area of interest is computational science. As a cross disciplinary researcher, I intend to address socially relevant problems. I have a keen interest to comprehend interplay of technology, human-factors, and society. To do so, I am focused on developing a formal academic discipline to understand human factors so that human centered Information and Communication Technology (ICT) based social intervention could be designed.

## Teaching Experience

**Punjab University College of Information Technology**

<http://pucit.edu.pk>

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

**Assistant Professor**

December 2018 – Present

**Lecturer**

October 2013 – June 2018

**Adjunct Faculty Member (Lecturer)**

October 2012 – October 2013

## Courses Taught

**Artificial Intelligence**

**Number of course executions: 9**

This is an undergraduate course. The course covers foundations of mechanized rational computing in general with an emphasis on agent oriented artifact design. Concepts taught in this course are also implemented in programming language in which students feel comfortable. The course also covers introduction to Prolog programming language. Course contents are available at <http://goo.gl/kD3kQS>.

**Mobile Computing**

**Number of course executions: 3**

This is an undergraduate course. The course covers foundations of mobile computing in general and implementation of related concepts on Android platform. Course contents are available at <http://goo.gl/sXh5Kd>.

**Programming Fundamentals**

**Number of course executions: 2**

This is an undergraduate course. The course covers foundations of problem solving and computer programming in general and implementation of related concepts in C programming language. Course contents are available at <http://goo.gl/IY6Dhl>.

**Enterprise Application Development**

**Number of course executions: 1**

This is an undergraduate course. The course covers foundations of enterprise application development in general and its implementation using JSE, JEE, Struts and Web 2.0. Course contents are available at <http://goo.gl/shBH0>.

## Academic Administration

**Member of FYP Deliverable and Evaluation Criteria Committee**

August 2018 – Present

The committee has mandate to revise project deliverables and evaluation mechanism of Final Year Projects (FYP) of undergraduate students in order ensure quality of the projects.

**Member of Committee for Organizing Meeting with PUCIT Alumni CEOs**

November 2017 – Present

**Secretary of Revision and Development of Courses Committee**

August 2015 – Present

The committee has mandate to revise and develop core courses and programming courses of BS and MSc degree programs. I am responsible for organization of meetings, record keeping, communication, and correspondence of the agenda and action items.

**Member of Computer Society Faculty Board**

October 2017 – Present

The society has mandate to organize seminars, workshops for state-of-the-art technologies. The society is also responsible for organizing technical competitions, study tours and industry visits.

**Research Experience****Artificial Intelligence and Multidisciplinary Research Lab**<http://aim.pucit.edu.pk>**Punjab University College of Information Technology****University of the Punjab, Lahore, Pakistan.****Research Associate**

October 2013 – Present

Co-supervision and coordination of undergraduate final projects and M.Phil. theses as well as related administrative tasks. I am also responsible for management of software / hardware infrastructure of lab. This role is voluntary.

**Research Assistant**

February 2013 – October 2013

Research on mandatory M.Phil. research thesis “A Multi-Agent Model for Realistic Urban Traffic Flow Simulation”, Co-supervision and coordination of undergraduate final projects as well as related administrative tasks. The position was paid internship.

**Projects Supervised****M.Phil. Theses**

1. Design and Analysis of a Social Agent (2015)
2. Modeling and Simulation of Collective Intelligence (2017)
3. Design and Evaluation of Human Factor based Interface Model for Microscopic Traffic Models (in progress)
4. Modeling and Simulation of Social Phenomenon on Individual Behavior in SoViz Framework (In Progress)

**Undergraduate Capstone Projects**

1. Digital Research Repository Scrapper (2014)
2. Virtual Reality Powered Driving Tutor (2015), won SoftExpo 2015 Development Category
3. Incorporation of Human Personality in Car-Following Model (2015), runner up SoftExpo 2015
4. Human in-the-loop Virtual Reality Powered Traffic Simulator (In progress)
5. Drive Safe, an android application integrated with Car Engine for driver safety (In progress)
6. Audit Wheel, A fleet management system with emphasis on audit and control (In progress)
7. Inherit Eco-Driving Aspects in Existing Car-Following Models (In progress)

**Research Peer Review Service**

1. 13<sup>th</sup> International Conference on Frontiers of Information Technology (FIT'15)
2. 14<sup>th</sup> International Conference on Frontiers of Information Technology (FIT'16)
3. 15<sup>th</sup> International Conference on Frontiers of Information Technology (FIT'17)

**Engineering Experience****Gameview Studios (Pvt.) Ltd.**<http://gamevsa.net/>**Lahore, Pakistan.****Software Engineer**

July 2010 – October 2012

**Technologies, Roles and Responsibilities****Google App Engine Server Applications**

Development and maintenance of Google app engine (GAE) based server applications. GAE is a scalable cloud computing platform as a service (PaaS). The technology was used as back-end for smart phone social games using Python SDK. GAE server application platform is very scalable and relatively cheap in comparison to infrastructure as a service (IaaS) however it poses restriction on application design.

**LAMP (Linux, Apache, MySQL, Python) Server Applications**

Development and maintenance LAMP servers and server applications. The technology was used as back-end for smart phone social games. The technology provides more control over GAE but it is relatively costly.

**POC Development**

Exploration and evaluation of new client and server-side technologies for potential application in products. Development of proof of concepts (POC) of novel ideas on several server side and client-side technologies (android).

## Research Findings

**Co-Principal Investigator, National Center of Artificial Intelligence (NCAI), University of the Punjab.** (Approximately 100 million PKR)

**PhD Researcher, NRP, Higher Education Commission.** (Approximately 5 million PKR)

**Annual Research Grant University of the Punjab.** (2014, 2015, 2016, 2018) (Approximately 5 million PKR)

## Journal Publications

**M. M. Mubasher, S. W. Jaffry, M. M. Yousaf, I. S. Bajwa, S. Sarwar, and L. Aslam, "A smart integrated environment for vehicular traffic simulation,"** International Journal of Communication Systems, vol. 32, no. 13, p. e4029, 2019. (ISI Indexed, Impact Factor Journal)

**M. Mian and W. Jaffry, "Modeling of individual differences in driver behavior,"** J Ambient Intell Human Comput, May 2019. (ISI Indexed, Impact Factor Journal)

**Mubasher MM, Jaffry SW. Incorporation of the Driver's Personality Profile in an Agent Model.** PROMET – Traffic & Transportation. 2015 Dec 21; 27(6):505–14. (ISI Indexed, Impact Factor Journal)

## Conference Publications

W. Batool, **M. M. Mubasher**, and S. W. ul Qounian, **"Modeling Task Capability in Full Velocity Differential Model,"** in 2019 2nd International Conference on Advancements in Computational Sciences (ICACS), 2019, pp. 1–5.

**Mubasher MM, Jaffry SW, Jahangir R. Modeling of Individual Differences in Car-following Behavior of Drivers.** 20<sup>th</sup> International Multitopic Conference (INMIC). Lahore (Pakistan), 2017, accepted for publication.

Fatima BH, Jaffry SW, **Mubasher MM**, Sherwani MKA, Haseeb A. **Human Acceptance of Autonomous Social Media Agent.** 2016 IEEE 4th International Conference on Future Internet of Things and Cloud Workshops (FiCloudW). Vienna (Austria), 2016. p. 200–205.

**Mubasher MM, Jaffry SW. Systematic Literature Review of Vehicular Traffic Flow Simulators.** 2015 International Conference on Open Source Software Computing (OSSCOM). Amman (Jordan), 2015. p. 1–6.

**Mubasher MM, Farid MS, Khaliq A, Yousaf MM. A Parallel Algorithm for Change Detection.** 15th International Multitopic Conference (INMIC). Islamabad (Pakistan), 2012. p. 201–8.

## Research Presentations / Posters

**Mubasher MM, Jaffry SW. Vehicular Traffic Flow Simulation Development Environment.** Presented in 5<sup>th</sup> International Multidisciplinary Conference, Lahore (Pakistan), September 2015.

**Mubasher MM, Jaffry SW. A Multi-Agent Model for Realistic Urban Traffic Flow Simulation.** Presented in SoftExpo'15 Graduate Research Symposium, Lahore (Pakistan), May 2015.

**Mubasher MM, Jaffry SW. Dengue Epidemic Spread Simulation.** Presented in 2nd Annual Computational Science Conference, Islamabad (Pakistan), October 2013.

## Trainings and Workshops Attended

### Cyber Security

November 24 – 26, 2017

By Dr. Amjad Hussain, Professor,  
Fast, NU, Lahore, Pakistan  
At Fast, NU, Lahore, Pakistan

### Structural Equation Modeling

September 28 – 29, 2017

By Dr. Omer, Assistant Professor,  
COMSATS, Islamabad, Pakistan  
At COMSATS, Islamabad, Pakistan

### Human Centered Digital Design

November 17 – 21, 2014

By Dr. Mike Best, Associate Professor,  
Georgia Tech., USA  
At Information Technology University, Lahore, Pakistan

### Visualization in Science and Technology Education

September 15 – 18, 2013

By Dr. Violeta Ivanova, Founder and Creative Director,  
ARTEMiS Visualization Program,  
Massachusetts Institute of Technology, USA  
At Virtual University, Lahore, Pakistan

## Education

### **Ph. D Computer Science (Computational Modeling and Simulation) (Synopsis Approved)**

2013 – Present

**Punjab University College of Information Technology  
University of the Punjab, Lahore, Pakistan**

### **M. Phil Computer Science**

2011 – 2013

**Punjab University College of Information Technology  
University of the Punjab, Lahore, Pakistan.**

#### **Thesis**

#### **A Multi-Agent Model for Realistic Urban Traffic Flow Simulation**

Computational modeling is branch of computer science which deals with multiple disciplines. It assists other domains by providing theory, tools and technology to model and simulate related systems and phenomena. In purposed research a phenomenon from the domain of urban engineering and traffic management namely “driver cognition” is modeled and simulated with the help of computational modeling techniques. As a vehicle in a traffic flow simulation should reproduce on road driver’s behavior hence model of driver cognition is required. To meet this challenge concepts from cognitive science and psychology are employed in computational modeling. Details of on road realistic driver behavior is modeled and extended to incorporate law abidance and social moral norms such as whether an individual driver follow the traffic rules and regulation or not? As in complex systems behavior of an individual can have butterfly effect and can become root cause of an emergent phenomenon. Hence global effects of a traffic flow depend upon behavior of a single driver. In this research several experiments are performed to see effect of individuals’ personality and behavior on overall traffic flow.

### **Bachelor of Science in Information Technology**

2006 – 2010

**Punjab University College of Information Technology  
University of the Punjab, Lahore, Pakistan.**

#### **Capstone Project Image Searcher**

It is a Java API that can interact with MATLAB to call image processing routine. This project is based on J2SE integrated with MATLAB, using Java Native Interfaces. Java Native Interfaces allow to interface a Java Program with libraries written in C language. MATLAB engine provides interface for C application using COM object. This tool is standalone software plus this project provides basis to make a platform independent system which provides interface to MATLAB for Java.

### **Intermediate of Computer Science**

2004 – 2006

**Govt. Islamia College Civilines, Lahore, Pakistan.  
Board of Intermediate and Secondary Education, Lahore Pakistan.**

### **Matriculation (Science)**

1994 – 2004

**Govt. Central Model School Branch No. 2, Retigon Road, Lahore, Pakistan.  
Board of Intermediate and Secondary Education, Lahore Pakistan.**

## Awards

Research Incentive Award, University of the Punjab, 2015

Indigenous Scholarship from Higher Education Commission Pakistan for PhD, 2015

Merit Scholarship, 2009, Punjab University College of Information Technology, University of the Punjab, Lahore, Pakistan.

## Social Services

### **Lahore High Court Bar E-Election**

February 2015 – Present

Each year since 2015, I lead a team of more than 80 undergraduate IT students to conduct bio-metric voter verification and electronic balloting at Lahore High Court Bar, Lahore, Pakistan. The election is conducted to elect executive body of Lahore High Court Bar Association (LHCBA) for one year. In 2016, Election Commission of Pakistan also sent their technical observes to assess the execution of the election. The team of students is selected from Punjab University College of Information Technology (PUCIT).

## Extracurricular Activities

Office In charge 2009 - 2010, Computer Society, Punjab University College of Information Technology, University of the Punjab, Lahore, Pakistan.

## References

Dr. Syed Mansoor Sarwar, Professor, Principal (Current Boss, Teacher)  
Punjab University College of Information Technology, University of the Punjab, Lahore, Pakistan.  
[principal@pucit.edu.pk](mailto:principal@pucit.edu.pk), <http://pu.edu.pk/images/cv/1310024082977.pdf>

Dr. Syed Waqar ul Qounain Jaffry, Assistant Professor (MPhil and PhD Supervisor, Co-author, Teacher)  
Punjab University College of Information Technology, University of the Punjab, Lahore, Pakistan.  
[swjaffry@pucit.edu.pk](mailto:swjaffry@pucit.edu.pk), <http://faculty.pucit.edu.pk/swjaffry>

Dr. Shahid Farid, Assistant Professor (Co-author, Teacher)  
Punjab University College of Information Technology, University of the Punjab, Lahore, Pakistan.  
[shahid.fareed@pucit.edu.pk](mailto:shahid.fareed@pucit.edu.pk), <http://www.di.unito.it/~farid/>

Mr. Atif Gulzar, Vice President Engineering (Former Boss)  
Caramel Tech. Studios (PVT.) LTD. Lahore, Pakistan  
[atif.gulzar@gmail.com](mailto:atif.gulzar@gmail.com), <http://pk.linkedin.com/in/atif-gulzar-16b1324>