

MUHAMMAD TAQI MEHDI

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Objective: Seeking a research internship position.

Education:

Doctor of Philosophy (**PhD**), University of California at Los Angeles, UCLA 2013 – to date
Computer Science GPA 4.0/4.0

Awards: Computer Science **Departmental Fellowship** during first two years of PhD
Finalist: **Qualcomm Innovation Fellowship Award 2015**. Winners to be announced in March 2015

Master of Information and Ajou University, Korea August 2008
Communication Engineering

Awards: Received **Korean Government Scholarship** for two years Master Program
Received **Ajou University Tuition Fee Scholarship** for two years Master Program.

Bachelor of Information Technology National University of Sciences and Technology, NUST, August 2006
Pakistan

Awards: Funded by **Pakistan Telecommunication Limited** for demonstration of the project in USA

Work Experience:

HP Research Lab, Mobility Research Group, Palo Alto June 2015 – September 2015
Research Intern

- Has led first study and implementation efforts that completely virtualizes **LTE Network Functions (NFs)** in indoor operational LTE network.
- Provided **fault tolerance** schemes in Virtualized LTE NFs.
- Proved the efficacy of proposed schemes in operational LTE network.

Qualcomm, Research Center, Office of the Chief Scientists, San Diego June 2014 – September 2014
Software Engineer Intern

- Has worked on **LTE Acolyte project**, where I have resolved dependencies between Fusion and Peregriac platforms.
- Implemented **message passing scheme** between kernel and user space using Netlink and message parser.
- Worked on Acolyte hardware prototype and **helped resolving timing issues** to cater DC offset.
- Has worked on patent ideas to and beyond Acolyte project.

LG Electronics, Mobile Communications R&D HQ, Seoul, Korea June 2010 – September 2013
Senior Software Engineer

- In depth understanding of 3GPP LTE standardization, especially LTE Protocols.
- Implementing part of **System Determination and System Selection procedures** for LGE propriety LTE Chipset module named L2000.
- Implementation of **call control and event notification services of Call Manager** Module of LGE propriety LTE Chipset module named L2000.
- In depth understanding of **QUALCOMM's LTE chipset implementation** by breaking down the whole structure into different modules and understanding their inter-reliance.
- **On site debugging** and fixture of LTE Firmware issues as raised during **Interoperability Testing (IoT)**.
- Issue debugging by analyzing logs from the network, i.e. **the core network** and the **eNodeB side**.
- Responsible for developing test plans, interpreting product specifications, and debugging failures.
- Managed LGE project called, Xenon, and **supervised the group of four engineers**.

Awards:

- **Best Employee award** for contribution in LTE platform, LGE, MC, January 2011
- **Best Performance award** for contributions in LTE protocols, LTE Division of MC, LGE, November and October, 2010

Electronics and Telecommunication Research Institute, ETRI, Korea August 2008 – June 2010
Member of Technical Staff

- R&D on TDMA and Channel Hopping **MAC Schemes** of Scalable/Mobile/Reliable Wireless Sensor Network Project (**S-MoRe**)
- Asynchronous Multi-threaded MAC (**M-MAC**) for WSN – a better approach over X-MAC and RI-MAC
- Participating in **standardization activities** in IEEE 802.15.4 e and in IETF 6LoWPAN working group

Awards: Young Researcher award of the year 2009.

SK Telecom, Seoul, Korea

December 2007 – February 2008 & December 2006 – February 2007

Intern

- Implemented part of future VAS i.e. Interactive Learning System, and Sentence Recognition System for SK telecom.
 - Worked on the implementation of an ecosystem “T-Ecosystem” for SK telecom’s mobile platform “T-PAK Platform”, which has been launched in October 2007. T-PAK Ecosystem had replaced Qualcomm’s BREW and Nokia’s NCD.
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Academic and Industrial Projects:

- Knowledge and implementation on Cloud System, Data Center Networks and Big Data.
 - Experience in installing, configuring, and administrating Hadoop cluster of major Hadoop distributions.
 - Have hands on experience in writing MapReduce jobs in Java.
 - Knowledge and prototype implementation in NS2 for Google Chubby system, Google Big Data, Windows Azure and Amazon EC2.
 - Proposed and simulated feasible prototype of Kilo-core processors for high performance computing.
 - Expertise in designing Data Center Networks and providing high availability with minimum replicas.
 - Developed multiplayer car racing game using Java Threads as core function.
 - Participated in the implementation of Credit Information Bureau Software development for State Bank of Pakistan.
 - Designing and implementing Valued Added Service Software for SK telecom in MySQL.
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Technical Skills:

- C implementation and debugging of LTE protocols and firmware modem.
 - LTE IoT execution by adding scripts in LTE modem part as well as debugging of IoT issues.
 - Programming sensor nodes.
 - Implementations over IEEE 802.15.4 standard.
 - Algorithmic and Structural Modeling.
 - C++, Visual C++, Qualnet Simulation, MATLAB, JAVA Enterprise, JAVA 2 ME.
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Selected Publications:

- **Muhammad Taqi Raza**, et al., "*Requirements and Design Architectures of Sensor Service Portal (SSP) in Ubiquitous Pervasive Environment*", Handbook of Research on Mobile Software Engineer Design, Implementation and Emergent Applications, IGI Publishing, 2011.
 - **Muhammad Taqi Raza**, et al., "*Dead Reckoning Based Target Tracking in Wireless Sensor Networks*", ACM SIGBED REVIEW, 2009
 - **Muhammad Taqi Raza**, et al., "*An Architectural Framework for Web Portal in Ubiquitous Pervasive Environment*", ACM/IEEE CNSR, 2009
 - **Muhammad Taqi Raza**, et al., "*Design and Implementation of an Architectural Framework for Web Portals in a Ubiquitous Pervasive Environment*", SENSORS Journal, 9(7), 5201-5223, 2009; (**SCI-E; Impact Factor-1.87**)
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Research Experience:

Graduate Research Assistant

Computer Science Department, UCLA

September 2013 – to date

- Working on recent issues in the areas of Data-Centric Networks, Cloud Computing, Sensor Networks and LTE.

Graduate Research Assistant

Ajou University, iLab Korea

September 2006 – July 2008

- **Test-bed implementation of SSP over 150 sensor nodes**, one of the world largest IP based WSN test-bed
- Target Tracking in WSN: YAW rate based target tracking protocol and its adaptive schemes.
- Mobility Management: Inter-PAN and Intra-PAN mobility schemes for 6LoWPAN.

Research Assistant

NUST, Pakistan and UNCC, USA

January 2005 – August 2006

- Worked on **NSF funded project** “Distributed Tracking Localization and Tracking in Wireless Sensor Networks”. This project was jointly carried out by NUST and UNCC
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Research Achievements

- Published more than **13 refereed research articles**, with citation more than **160 times**.
 - Published two Korean and one US **patents**.
 - Actively participated in **3GPP, IEEE P802.15 working group as well as IETF** working group on IPv6 over WPAN
 - Acted as a **reviewer** of IEEE Transaction on Mobile Computing, ACM CNSR, and IEEE Magazines, etc.
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