# Dr. MUHAMMAD ABID

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## Summary of Skills

- Internet of Things
- Bluetooth Low Energy and IOT Gateways Programming
- GPU Computing
- Strong knowledge of High Performance Processor Microarchitecture
- Strong knowledge of Memory Subsystem of Chip Multiprocessors (CMPs)
- Design and implementation of Cache Coherence Protocols for CMPs and Distributed Shared Memory (DSM) systems
- Design and implementation of Prefetching/Memory Streaming Techniques for CMPs and DSM systems
- Functional verification of OpenSPARCT1 CMPs Verilog Code
- Strong Innovative, Team-working, Creative and Problem Solving skills to achieve personal & team goals

## Research Funding

- **Nvidia GPU Education Center:** Nvidia USA donated THREE high performance GPUs of total cost Rs. 1.5 Million for high performance computing; Established in August 2015
- **Data Science Lab:** Higher Education Commission, Pakistan approved Rs. 1.9 Million for establishing Data Science Lab focusing around Big Data Analytics; Likely to be completed in September 2017
- **Ignite Grassroots ICT Research Initiative:** Ignite approved Rs. 140,000 for two undergraduate projects

## PhD/ MS Courses

- **Advanced Computer Architecture:** This course is about becoming computer architect; URL: **https://goo.gl/D9tL6s**
- **GPU Computing:** This course is about speeding up data parallel applications using CUDA C; URL: **https://goo.gl/qky9cU**
- **Large Scale Distributed Computing:** This course is about writing Big Data Applications using Apache Spark, Apache HDFS, etc. URL: **https://goo.gl/QBJ26f**
- **Grooming and Sprucing:** This course teaches students how to speak, communicate, dress, etc. URL: **https://goo.gl/yK13yj**

## Workshops/ Seminars

- **GPU Computing Workshop:** Five day long workshop about writing GPU applications using CUDA C; URL: **https://goo.gl/jb4SNG**

## PhD/ MS Theses

- **DWX: Extracting Content from the Deep Web; URL: http://raoumer.com/dwx/**
- **Prediction of Service Faults in Telecommunication Network**

## Academic Qualifications

- **PhD Computer Science & Technology**,
  Tsinghua University, China 2007 - 2012

- **M.S. Information Technology** **(C.G.P.A. = 3.6 out of 5)**
  **Pakistan** Institute of Engineering & Applied Sciences (PIEAS), Pakistan.2003 - 2005

- **M.Sc. Electronics** **(C.G.P.A. = 3.65 out of 4)**
  University Of Sindh, Jamshoro, Sindh, Pakistan. 2000 – 2001

- **B.Sc. Electronics** **(C.G.P.A. = 3.68 out of 4)**
  University Of Sindh, Jamshoro, Sindh, Pakistan. 1997 – 2000

## Summary of Professional Experience

**On Request**

## Honors

- Principal Investigator of Nvidia GPU Education Center
- Co-Principal Investigator of Data Science Lab
- **Best Paper Award** at Network, Architecture, and Storage 2011 Conference
- Winner of Higher Education Commission, Pakistan PhD scholarship
- Winner of PIEAS M.S. Fellowship
- Secured **1st Position** in B.Sc. ELECTRONICS
- Secured **3rd Position** in M.Sc. ELECTRONICS
- Secured **5th Position** in M.S. Information Technology

## Specialized Abilities

- **Programming Languages**: Scala, Java, C/C++, JAVA, Python, CUDA C
- **Cluster Management:** Spark cluster, LDAP user account management, NFS
- **Simulation Tools**: Multifacet's General Execution-Driven Multiprocessor Simulator (GEMS) Toolset, Simics

## Theses

- **Prefetching / Streaming Techniques for Multiprocessor Systems -** PhD
- **Design of GPIO Core in Verilog and its Implementation on Xilinx FPGAs** - M.S. (I.T.)

## Publications

## Journals:

- Muhammad Naveed Akhtar, Muhammad Hanif Durad, Anila Usman, **Muhammad Abid, " Efficient Memory Access Patterns for Solving 3D Laplace Equation on GPU",** Iranian Journal of Science and Technology, Transactions A: Science, 1(2), June 2016
- ***Muhammad Abid***, Haixia Wang, and Dongsheng Wang, ***"The Case of Using Multiple Streams in Streaming"***, International Journal of Automation and Computing, China, **http://www.ijac.net/EN/volumn/home.shtml**, 10.6, 587-596, May 2014
- ***Muhammad Abid***, Haixia Wang, and Dongsheng Wang, **"*Analyzing Off-Chip Misses in PARSEC for Prefetching*"**, International journal of advancements in computing technology, South Korea, **http://www.aicit.org/ijact/home/editorial.html?_jname=IJACT** , 3(10), pp. 299-306, Nov 2011
- ***Muhammad Abid***, Haixia Wang, and Dongsheng Wang, ***"Identifying streams in PARSEC workloads"***, Science International, http://www.sci-int.com/, 22(4), pp. 239-243, Dec. 2010

## Conference:

- ***Muhammad Abid***, Haixia Wang, and Dongsheng Wang, ***"Coherent Temporal Streams in PARSEC"***, *6th IEEE International Conference on Networking, Architecture, and Storage,* (**One of the three BEST PAPERS**) **http://www.nas-conference.org/NAS-2011/program.html**, pp. 295-301, August 2011, (EI: 20113814348330)