

# Adnan Abid

## EDUCATION

---

<b>PhD (IT) March 2012</b>	<b>Politecnico Di Milano, Milan, Italy.</b> <b>Thesis Title:</b> Top-K queries for Web based data sources. <b>Advisor:</b> Prof. Stefano Ceri ( <a href="http://dbgroup.como.polimi.it/ceri/">http://dbgroup.como.polimi.it/ceri/</a> ) <b>Research Areas:</b> Search Computing: Optimization in Rank Joins.
<b>MS (IT) 2007</b>	<b>National University of Science and Technology (NUST), Pakistan.</b> (MS thesis at <b>Swiss Federal Institute of Technology (EPFL), Switzerland.</b> ) <b>Thesis Title:</b> Keyword based Indexing and Retrieval System over SRB. <b>Research Areas:</b> Distributed Database, Information Retrieval.
<b>BS (CS) 2001</b>	<b>National University of Computer and Emerging Sciences (NUCES) a.k.a. FAST, Pakistan.</b>

## PROFESSIONAL CAREER SUMMARY

---

More than 20 years of Professional Experience in Academia and Industry  
More than 70 Research Publications with Cumulative Impact Factor ~ 130+

---

**(Academia: A; Research: R; Industry: I; Administration D)**

### After Post-graduation

<b>[3 Years 2015-18] Faculty Fellow</b>	<b>A/R</b>	<b>George Mason University, VA, USA</b>
[Since May 2023] Professor	A/R/D	University of the Punjab, Pakistan
[1.5 Year] Professor	A/R/D	Virtual University of Pakistan, Pakistan
<b>[~8 Years] Faculty Member</b>	<b>A/D</b>	<b>University of Management &amp; Technology, Pakistan</b>
[1 Year] Professor	A/R/D	University of Management and Technology, Pakistan
[~6 Years] Associate Professor	A/R/D	University of Management and Technology, Pakistan
[1 Year] Assistant Professor	A/R/D	University of Management and Technology, Pakistan
[2 Years] Assistant Professor	A/R	University of Central Punjab, Lahore, Pakistan
[3 Years] Research Assistant	R	Politecnico di Milano, Milan, Italy
[4 Months] Assistant Professor/Director	A/R	Government College University, Lahore, Pakistan
[15 Months] Database Architect	I/R	Alliances IT, Pakistan/Frontiers Research Foundation, Switzerland

### After Graduation

[1 Year] Research Assistant	R	EPFL, Lausanne, Switzerland
[1.5 Year] Research Assistant	R	National University of Science & Technology, Pakistan
[2 Years] Database Manager	A	University of the Punjab, Lahore, Pakistan

## MEMBERSHIPS, HONOURS, AND AWARDS

---

- Associate Editor, IEEE Access a journal with Impact Factor 4.098; Editor PeerJ Computer Science IF: 3.1
- Member of National Curriculum Review Committee (NCRC) of Higher Education Commission (HEC) of Pakistan, responsible for reviewing Computing Curriculum.
- Program Evaluator/Member of National Computing Education Accreditation Counsel (NCEAC), responsible for ensuring the quality of education in educational institutes offering computing degrees (since 2018).
- Faculty Fellow with George Mason University, USA from 2015 to 2018.
- PhD fellowship from Politecnico Di Milano, Italy
- Organizing Chair, ACM Inter Collegiate Programming Contest (ICPC) Lahore Regional.
- Selected by NUST for MS thesis at Swiss Federal Institute of Technology (EPFL).
- A scholarship from Higher Education Commission (HEC) of Pakistan for MS Degree.
- I was awarded merit scholarship in high school, and elementary school.
- Travel Grants: by ACM for CHI-2017; by CFETR for IEEE ICMLA 2016; by CFETR for CFETR 2016.

## TEACHING ACTIVITIES

---

I have been teaching several CS/IT courses at UG and PG level, while serving as a visiting/permanent faculty member at the following institutes in Pakistan.

### COURSES TAUGHT:

#### PG Level:

I have designed and taught the following Graduate level courses after my PhD.

- Advanced Database Systems
- Information Systems
- Distributed Database Systems
- Big Data
- Information Retrieval Techniques
- Machine Learning
- Advanced Software System Design and Architecture
- Advanced Data Structures

#### UG Level:

- Database Management System
- Distributed Database Systems
- Analysis of Algorithms
- Software Design and Architecture
- Software Engineering (I and II)
- Data Structures
- Object Oriented Programming
- Machine Learning

### E-Learning

I have recorded a graduate course on [Information Retrieval Techniques](#), for Virtual University (VU), Pakistan. YouTube Channel: <https://www.youtube.com/@dr.adnanabid>

## ADMINISTRATIVE EXPERIENCE

---

- **Director Center for Advancement of Science and Technology**  
**University of Management and Technology, Pakistan**  
**May 2017 – to date**
  - Organizing Invited talks by practitioners. / Arranging trainings for students and faculty.
  - Establishing fruitful liasion between academia and industry
  - Foster research culture in the university and among the students
- **Head of Computer Science Department**  
**University of Management and Technology, Pakistan**  
**March 2016 – April 2017**
  - Scheduling and Course Allocation.
  - Faculty Development Trainings.
  - Lead the accreditation of all BS Degree programs from National Computing Education Accreditation Council (NCEAC), Pakistan.
  - Established Board of Studies/Faculty and revision of the degree programs.
  - Organized first conference in Computing at UMT as head of event.
  - Organized the largest computer programming competition in the history of Pakistan with more than 500 participant teams from all over the country under the platform of ACM-ICPC
- **Director Academics, Department of Computer Science, UMT, Pakistan**  
**Feb 2015 – Feb 2016**
  - Faculty Training and Development
  - Establishment of course coordination system
- **Conference Secretary, International Conference on Innovative Computing (IC)<sup>2</sup>, 2016, 2019**
  - Lead the organization of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> International Conference on Innovative Computing.
  - Organized the 2<sup>nd</sup> Conference from IEEE platform.
  - Invited many International and National reputed researchers, and raised funds.
- **Member of Several University Committees**
  - Board of Advanced Studies and Research; Research Grant Committee; Equivalence Committee; Board of Faculty for Computing; Board of Studies for Computer Science; Financial Assistance Committee; ERP Implementation Committee; Disciplinary Committee; Unfair Means Committee.

## RESEARCH ACTIVITIES

---

I am an **approved PhD Supervisor** by Higher Education Commission (HEC) of Pakistan.

### **Research Areas**

- Information Retrieval/Data Management
- Computer Science Education/Education and Technology
- ICT4D (Solving Problems with ICT)/NLP

### **Major International Research Projects**

#### **Pakistan Sign Language (PSL) Translation**

**Research Area:** ICT4D

[[https://sst.umt.edu.pk/Information-System-Research-Group/Projects-\(ISRG\).aspx](https://sst.umt.edu.pk/Information-System-Research-Group/Projects-(ISRG).aspx)]

**Jun 2015 – On going**

I am heading a project that is working with the objective of developing theories, tools, and applications for the deaf community of Pakistan to help them communicate with the other people. We intend to develop a standard corpus for PSL that will rise the standard of the language. The project also aims to develop machine translation systems for translation natural language text into PSL and vice-versa.

**Collaboration for Faculty Excellence in Teaching and Research** [<https://cfetr.wordpress.com/>]

**Research Area:** Education and Technology

**April 2015 – April 2018**

Through UMT, we have entered into a [collaboration with George Mason University's Department of Education](#) for working in improvement of Teaching and Research. I am working in collaboration with Dr. Rebecca K. Fox, and Dr. Anasatasia P. Samaras. This two pronged collaboration has resulted into research work in Computer Science Education, Special Education. It has further helped conducting Action Research to improve the curricula of the courses that I teach.

**Search Computing** [[www.search-computing.org](http://www.search-computing.org)]

**Research Areas:** Information Retrieval/Data Management

**Jan 2009 – Dec 2011**

A Web based search system with the objective of fetching the data from Web based data sources against a search query. The initiative of the project is to treat the Web Search as a Process, while involving the data extraction from the "so called" deep Web.

I have been working for 3 years on this project during my PhD. I have worked on the optimization of rank joins/top-k queries for search computing. I have proposed and implemented different rank join strategies in the Search Computing query processing engine.

**Frontiers In Neuro-science** [[www.frontiersin.org](http://www.frontiersin.org)]

**Research Areas:** Information Retrieval/Data Management

**Jun 2007 – May 2008**

A software system for reviewing, compiling, and publishing an online journal. I worked on database design, query optimization and database server optimization for this project. The main theme is to preserve all the research work irrespective of its selection for the journal.

I have been involved in data modeling, to ensure efficient storage and retrieval from the system. This helped efficient data manipulation of data which is pertinent for such an online system.

**Blue Brain Project** [<http://bluebrain.epfl.ch>]

**Research Areas:** Data Management

**Jun 2006 – May 2007**

The aim of the project is to simulate the neocortical column of the human brain with the help of extensive experimental study over mammalian brain.

I was supposed to provide the neuroscientists with a Rich Client Platform to store and retrieve scientific data. The underlying distributed storage systems was Storage Resource Broker (SRB) and I enhanced the capabilities of SRB by adding a hybrid P2P keyword based indexing and searching system empowered by ontology to make the search results generic and flexible.

## **Books**

Information Retrieval Techniques, published by Virtual University of Pakistan.

This book is being taught to the students registered in the graduate course of Information Retrieval Techniques recorded by me as a resource person.

## **Thesis Supervision**

**Completed:** 5 PhD, 20 MS thesis

**On-going:** 3 PhD thesis; 3 MS thesis.

## **PhD Thesis Supervision:**

### **Completed**

[Dr. Nabeel Sabir](#) - Bridging the Communication Barrier for the Deaf in Pakistan using Information Technology

[Dr. Kashif Ishaq](#) - Cultural Tailoring of Serious Game Design Model for Language Learning

[Dr. Uzma Omer](#) - A cognitive framework for the Improvement of learning analytics Efficiency in Introductory Programming courses

[Dr. Rabia Tehseen](#) - A Framework for the Prediction of Earthquakes in Western Himalayas

[Dr. M. Ramzan](#) - A Framework for Multiclass Unusual Activities Recognition using Deep Learning

### **Ongoing**

- A Gamification based project centric framework for teaching applied computing courses

- A Robust Ad-hoc Collaborative Space for Customized Mobile Application Development

- Language Resource and Model for Intrinsic Plagiarism Detection for Urdu Language

## **MS Thesis Supervision:**

### **Completed**

2021-22

- A Process to Develop Digital Corpus for Teaching the Deaf Students

- Framework and Digital Corpus for Teaching English to the Deaf

- Scientometric analysis of top research venues in Database Systems

- A Sentiment Analysis based Recommender System for Hybrid Cars

- A corpus for sentiment analysis in Urdu language

2019-20

- Blockchain Technology for Healthcare Systems

- Phonetic Matching of Roman Urdu Names Using a Novel Weighted Edit Distance

- A Lean Approach to Design Use Case for Implementing Blockchain Technology in Pharmaceutical

- Supply Chain Management Using Hyperledger Fabric Framework

- Taxi Dispatch Optimization with Lazy Dispatching and TOPSIS

2017-18

- A Gold Standard Business Process Model Collection

- Aspect Level Sentiment Analysis of Roman Urdu Reviews

- Automatic Identification of Duplicate News Stories

- Incidents Management System (IMS) – A framework for the management of Human Loss News Reports

- Evaluation of Learning Management System (LMS) Though Feature-Rubric

2014-16

- iCrowd Framework – A Framework for Management of (identifiable) Crowd

- Crowd Tracking and Simulation of Hajj Pilgrims using Big Data

2012-13

- Survey of Search Result Diversification

- Distribution Adaptive Provisional Reporting in Top-K Queries

### **Ongoing**

- A corpus for intrinsic plagiarism detection for Urdu language

## SELECTED RESEARCH PUBLICATIONS

1. Uzma Farooq, Mohd Shafry Mohd Rahim, Nabeel Sabir, Amir Hussain, Adnan Abid\*: **A Multi-stack RNN based Neural Machine Translation Model for English to Pakistan Sign Language Translation**. Neural Computing and Applications (2023).  
[W Category IMPACT FACTOR: 5.1]
2. U Omer, R Tehseen, MS Farooq, A Abid: **Learning analytics in programming courses: Review and implications**. Education and Information Technologies, 1-47, (2023).  
[W Category IMPACT FACTOR: 2.91]
3. NA Nawaz, K Ishaq, U Farooq, A Khalil, S Rasheed, A Abid, F Rosdi: **A comprehensive review of security threats and solutions for the online social networks industry**. PeerJ Computer Science 9, e1143. (2023)  
[W Category IMPACT FACTOR: 3.1]
4. M Ishaq, A Abid\*, MS Farooq, MF Manzoor, U Farooq, K Abid, MA Helou: **Advances in database systems education: Methods, tools, curricula, and way forward**, Education and Information Technologies, 1-45 (2022).  
[W Category IMPACT FACTOR: 2.91]
5. K Ishaq, F Rosdi, NAM Zin, A Abid\*: **Serious game design model for language learning in the cultural context**, Education and Information Technologies, 1-39 (2022)  
[W Category IMPACT FACTOR: 2.91]
6. MS Farooq, S Riaz, MA Helou, FS Khan, A Abid, A Alvi: **Internet of Things in Greenhouse Agriculture: A Survey on Enabling Technologies, Applications, and Protocols**, IEEE Access 10, 53374-53397 (2022).  
[W Category IMPACT FACTOR: 3.1]
7. MS Farooq, OO Sohail, A Abid, S Rasheed: **A survey on the role of IoT in agriculture for the implementation of smart livestock environment**, IEEE Access 10, 9483-9505 (2022).  
[W Category IMPACT FACTOR: 3.1]
8. HA Abosaq, M Ramzan, F Althobiani, A Abid, KM Aamir, H Abdushkour, **Unusual driver behavior detection in videos using deep learning models**. Sensors 23 (1), 311. (2022)  
[W Category IMPACT FACTOR: 1.151]
9. A Abid\*, NA Nawaz, MS Farooq, U Farooq, I Abid, I Obaid: **Taxi Dispatch Optimization in Smart Cities Using TOPSIS**, Security and Communication Networks 2022.  
[W Category IMPACT FACTOR: 1.96]
10. MA Qureshi, M Asif, MF Hassan, A Abid, A Kamal, S Safdar, R Akber: **Sentiment analysis of reviews in natural language: Roman Urdu as a case study**, IEEE Access 10, 24945-24954 (2022)  
[W Category IMPACT FACTOR: 3.1]
11. MS Farooq, Z Kalim, JN Qureshi, S Rasheed, A Abid: **A blockchain-based framework for distributed agile software development**, IEEE Access 10, 17977-17995.  
[W Category IMPACT FACTOR: 3.1]
12. JN Qureshi, MS Farooq, A Abid, T Umer, AK Bashir, YB Zikria: **Blockchain Applications for the Internet of Things: Systematic Review and Challenges**, Microprocessors and Microsystems, 104632, (2022).  
[X Category IMPACT FACTOR: 3.5]
13. AW Malik, A Abid\*, S Farooq, I Abid, NA Nawaz, K Ishaq: **Cyber threats: taxonomy, impact, policies, and way forward**, KSII Transactions on Internet & Information Systems 16 (7) 2022.  
[X Category IMPACT FACTOR: 0.858]
14. LA Haafza, MJ Awan, A Abid, A Yasin, H Nobanee, MS Farooq: **Big data COVID-19 systematic literature review: pandemic crisis**, Electronics 10 (24), 3125 (2021)  
[W Category IMPACT FACTOR: 2.69]
15. Rabia Tehseen, M. Shoaib Farooq, Adnan Abid: **A framework for the prediction of earthquake using federated learning**, PeerJ Computer Science (Jun 201).  
[W Category IMPACT FACTOR: 3.1]
16. Uzma Farooq, Mohd Shafry Mohd Rahim, Nabeel Sabir, Amir Hussain, Adnan Abid\*: **Advances in machine translation for sign language: approaches, limitations, and challenges**, Neural Computing and Applications (May 2021).  
[W Category IMPACT FACTOR: 4.77]
17. U Farooq, MSM Rahim, NS Khan, S Rasheed, A Abid\*: **A Crowdsourcing-Based Framework for the Development and Validation of Machine Readable Parallel Corpus for Sign Languages**, IEEE Access 9, 91788-91806 (2021)  
[W Category IMPACT FACTOR: 3.1]
18. MS Farooq, SS Abbas, A Abid, S Rasheed: **A Hybrid Algorithm for Face Detection to Avoid Racial Inequity Due to Dark Skin**, IEEE Access 9, 145109-145114 (2021).  
[W Category IMPACT FACTOR: 3.1]

19. Kashif Ishaq, Nor Azan Mat Zin, Fadhilah Rosdi, Muhammad Jehanghir, Samia Ishaq, Adnan Abid\*: **Mobile-assisted and gamification-based language learning: a systematic literature review**, PeerJ Computer Science (May 2021).  
[W Category IMPACT FACTOR: 3.1]
20. A Khelifi, O Aziz, MS Farooq, A Abid, F Bukhari: **Social and Economic Contribution of 5G and Blockchain with Green Computing: Taxonomy, Challenges and Opportunities**, IEEE Access (April 2021).  
[W Category IMPACT FACTOR: 3.79]
21. Ayesha Rashid, Muhammad Shoaib Farooq, Adnan Abid, Tariq Umer, Rafi us shan, Yousaf bin Zikria,\* and Rashid Ali\*: **Social Media Intention Mining for Sustainable Information Systems: Categories, Taxonomy, Datasets and Challenges**, Complex & Intelligent Systems (April 2021).  
[X Category IMPACT FACTOR: 3.79]
22. MF Manzoor, A Abid, MS Farooq, NA Nawaz, U Farooq: **Resource allocation techniques in cloud computing: A review and future directions**, Elektronika ir Elektrotechnika 26 (6), 40-51.  
[X Category IMPACT FACTOR: 0.646]
23. Uzma Omer, M. Shoaib Farooq, Adnan Abid: **Cognitive Learning Analytics using Assessment Data and Concept Map: A Framework based Approach for Sustainability of Programming Courses**, Sustainability 12(17), pp: 6990 Aug 2020.  
[W Category IMPACT FACTOR: 2.576]
24. Adnan Abid\*, Ansar Abbas, Adel Khelifi, M. Shoaib Farooq, Razi Iqbal, Uzma Farooq: **An Architectural Framework for Information Integration using Machine Learning Approaches for Smart City Security Profiling**, International Journal of Distributed Sensor Networks, Oct 2020.  
[X Category IMPACT FACTOR: 1.151]
25. A. Abid\*, W. Ali, M. S. Farooq, U. Farooq, N. Sabir, K. Abid: **Semi-Automatic Classification and Duplicate Detection from Human Loss News Corpus**, IEEE Access 8, (May 2020) pp: 97737 - 97747.  
[W Category IMPACT FACTOR: 4.098]
26. Rabia Tehseen, Muhammad Shoaib Farooq, Adnan Abid: **Earthquake Prediction using Expert Systems: a systematic mapping study**, Sustainability 12(6) pp:2420 (Jan 2020).  
[W Category IMPACT FACTOR: 2.59]
27. Nabeel Sabir, Adnan Abid\*, Kamran Abid: **A Novel Rule Based Machine Translation System for English to Pakistan Sign Language Translation**, Cognitive Computation (31-May-2020) pp:1-18  
[W Category IMPACT FACTOR: 4.28]
28. Iqra Obaid, Muhammad Shoaib Farooq, Adnan Abid: **Gamification in Recruitment and Job Training: A Systematic Literature Review**, IEEE Access 8, 65164-78 (30 Mar, 2020).  
[W Category IMPACT FACTOR: 4.098]
29. Imran Abbas Khawaja, Adnan Abid\*, Muhammad Shoaib Farooq, Adnan Shahzada, Uzma Farooq, Kamran Abid: **Ad-hoc Collaboration Space for Distributed Cross Device Mobile Application Development**, IEEE Access 8, (12 Mar, 2020), pp: 62800-14.  
[W Category IMPACT FACTOR: 4.098]
30. Ul-Amin, R., Sventek, J., Mackenzie, L., & Abid, A.: **Smart and intelligent network selection approach to support location-dependent and context-aware service migration**. Journal of Ambient Intelligence and Smart Environments, 12(3), 219-237, (2020).  
[X Category IMPACT FACTOR: 2.75]
31. Rabia Tehseen, M. S. Farooq, Adnan Abid: **Fuzzy Expert System for Earthquake Prediction in Western Himalayan Range**, Elektrotechnika ir Elektrotechnika (2020).  
[X Category IMPACT FACTOR: 0.646]
32. Farooq, Muhammad Shoaib, Shamyla Riaz, Adnan Abid, Tariq Umer, and Yousaf Bin Zikria. **Role of IoT Technology in Agriculture: A Systematic Literature Review**. Electronics 9, no. 2 (Feb 2020): 319.  
[W Category IMPACT FACTOR: 1.764]
33. A Abid\*, MF Manzoor, MS Farooq, U Farooq, M Hussain: **Challenges and issues of resource allocation techniques in cloud computing**, KSII Transactions on Internet and Information Systems (TIIS) (2020) 14 (7), 2815-2839.  
[X Category IMPACT FACTOR: 1.764]
34. Aziz, Omer, M. Shoaib Farooq, Adnan Abid, Rubab Saher, and Naeem Aslam. **Research Trends in Enterprise Service Bus (ESB) Applications: A Systematic Mapping Study**. IEEE Access 8, 6 Feb (2020), pp: 31180-97.  
[W Category IMPACT FACTOR: 4.098]
35. Muhammad Attique; Muhammad Shoaib Farooq; Adel Khelifi; Adnan Abid: **Prediction of Therapeutic Peptides Using Machine Learning: Computational Models, Datasets, and Feature Encodings**. IEEE Access 8, Aug 2020.

- [W Category IMPACT FACTOR: 4.098]**
36. Ahmad Naeem; Muhammad Shoaib Farooq; Adel Khelifi; Adnan Abid: **Malignant Melanoma Classification Using Deep Learning: Datasets, Performance Measurements, Challenges and Opportunities**. IEEE Access, 8, Jun 2020.
- [W Category IMPACT FACTOR: 4.098]**
37. Farooq, Muhammad Shoaib, Misbah Khan, and Adnan Abid. **A framework to make charity collection transparent and auditable using blockchain technology**. Computers & Electrical Engineering 83, May 1, 2020, (2020): 106588
- [W Category IMPACT FACTOR: 2.189]**
38. Muhammad Shoaib Farooq, Shamayla Riaz, Adnan Abid, Kamran Abid, Muhammad Azhar Naeem: **A Survey on the Role of IoT in Agriculture for the Implementation of Smart Farming**, IEEE Access 7 (2019), pp: 156237-71, 25 Oct 2019 .
- [W Category IMPACT FACTOR: 4.098]**
39. Muhammad Ramzan, Adnan Abid, Hikmat Ullah Khan, Shahid Mahmood Awan, Amina Ismail, Muzamil Ahmed, Mahwish Ilyas, Ahsan Mahmood: **A Review on State-of-the-Art Violence Detection Techniques**, IEEE Access 7 (2019) pp: 107560-75. 30 Jul 2019.
- [W Category IMPACT FACTOR: 4.098]**
40. Khurram Shahzad, Rao Muhammad Adeel Nawab, Adnan Abid, Kareem Sharif, Faizan Ali, Faisal Aslam, and Arslaan Mazhar: **A Process Model Collection and Gold Standard Correspondences for Process Model Matching**, IEEE Access 7 (2019) : pp: 30708-30723, 13 March (2019).
- [W Category IMPACT FACTOR: 4.098]**
41. A Abid, N Hussain, K Abid, F Ahmad, MS Farooq, U Farooq, SA Khan, YD Khan, MA Naeem, N Sabir: **A survey on search results diversification techniques**, Neural Computing and Applications Jul (2016) 27(5) pp:1207-1229
- [W Category IMPACT FACTOR: 4.2]**
42. Muhammad Shoaib Farooq, S A Khan, Farooq Ahmad, S. Islam, Adnan Abid: **An Evaluation Framework and Comparative Analysis of the widely used First Programming Languages**. PLoS ONE 9(2) pp1-25: e88941 (Feb 2014) .
- [W Category IMPACT FACTOR: 3.7]**
43. Adnan Abid, Marco Tagliasacchi: **Provisional Reporting for Rank Joins**, Journal of Intelligent Information Systems, Vol. 40, Issue 3, pp: 479-500, Jun 2013.
- [W Category IMPACT FACTOR: 1.29]**
44. S. Ceri, A. Abid, M. Abu helou, A. Bozzon, D. Braga, M. Brambilla, A. Campi, F. Corcoglioniti, E. Della valle, D. Eynard, P. Fraternali, M. Grossniklaus, D. Martinenghi, S. Ronchi, M. Tagliasacchi, S. Vadacca: **Search Computing: an Approach for Managing Complex Search Queries**, IEEE Internet Comp., 14(6), pp 14-22, Jul. 2010.
- [W Category IMPACT FACTOR: 2.5]**
45. Kamran Abid, Nabeel Sabir Khan, Uzma Farooq, Muhammad Shoaib Farooq, Muhammad Azhar Naeem, Adnan Abid, **A Roadmap to Elevate Pakistan Sign Language among South Asia's Regional Sign Languages**, South Asian Studies Journal, Vol. 33, No. 2, 1 July 2018, pp:461-473.
- [X Category]**
46. Khan, Nabeel Sabir, Adnan Abid, Kamran Abid, Uzma Farooq, Muhammad Shoaib Farooq, and Hamza Jameel. **Speak Pakistan: Challenges in Developing Pakistan Sign Language using Information Technology**. South Asian Studies Vol 30 Issue 2, Dec 2015, pp: 367-379.
- [X Category]**
47. Muhammad Shoaib Farooq, Sher Afzal Khan, Kamran Abid, Farooq Ahmad, M. A. Naeem, M. Shafiq, Adnan Abid: **Taxonomy and Design Considerations for Comments in Programming Languages: A Quality Perspective**, Journal of Quality and Technology Management, Vol 10, Issue 2 (2014), pp 167-182.
- [X Category]**

#### SELECTED CONFERENCE AND WORKSHOP PUBLICATIONS

48. R Tehseen, MS Farooq, A Abid: **EPS: An earthquake prediction system using Federated Learning**, 2021 International Conference on Innovative Computing (ICIC), 1-8
49. Kashif Ishaq, Nor Azan Mat Zin, Fadhilah Rosdi, Adnan Abid and Uzma Farooq: **Effectiveness of Literacy & Numeracy Drive (LND): A Students' Perspective**. 3rd IEEE International Conference on Innovative Computing (2019).

50. Muhammad Asif, Muhammad Aasim Qureshi, Adnan Abid and Asad Kamal: **A Dataset for the Sentiment Analysis of Indo-Pak Music Industry**, 3rd IEEE International Conference on Innovative Computing (2019).
51. Uzma Farooq, Ayesha Asmat, Mohd Shafiq Mohd Rahim, Adnan Abid: **A Comparison of Hardware Based Approaches for Sign Language Gesture Recognition Systems**, 3rd IEEE International Conference on Innovative Computing (2019).
52. Tahreem Yasir, Adnan Abid, Adnan Shahzada: **Development of Smart phone based Cultural Social Stories for Intellectually Disabled Children of Pakistan**, 2<sup>nd</sup> International Conference on Advancements in Computational Sciences (2019). **(BEST PAPER AWARD)**
53. Adnan Abid, Abdullah Hassan Tufail: **An Evaluation Framework for Learning Management Systems**, 11<sup>th</sup> International Conference on Education, Research and Innovation (2018)
54. Uzma Farooq, Qasim Ali, Adnan Abid, **A Project Centric Approach To Increase Students' Involvement In Applied Computer Science Courses**, 11<sup>th</sup> International Conference on Education, Research and Innovation (2018)
55. Adnan Abid: **Blending Project Centric Approach with Gamification to Increase the Students' Involvement in Applied Courses**, Qatar Foundation Annual Research Conference Proceedings 2018 (4).
56. Khurram Shahzad, Kareem Shareef, Rao Faizan Ali, Rao Muhammad Adeel Nawab, Adnan Abid: **Generating Process Model Collection with Diverse Label and Structural Features**, 6<sup>th</sup> International Conference on Innovative Computing Technology, (2016).
57. Sheikh N. Saeed, Adnan Abid, Ehsan U. Waraich, Shahbaz Atta, Atif Naseer, and Emad A. Felemban: **iCrowd - A Framework for Monitoring of (Identifiable) Crowd**, 12<sup>th</sup> IEEE International Conference on Innovations in Information Technology, (2016).
58. Muhammad Shoaib Farooq, Adnan Abid, and Rebecca K. Fox: **A Formal Design for the Lexical and Syntax Analyzer of a Pedagogically Effective Subset of C++**, 15<sup>th</sup> IEEE International Conference on Machine Learning and Applications (2016).
59. Ansar Abbas, Uzma Farooq and Adnan Abid: **Classification of Human Loss News**. 1<sup>st</sup> International Conference on Innovative Computing (2016).
60. Ashfaq Ahmed, Muhammad Shoaib Farooq, Ishaq Raza, Adnan Abid, **An effective approach to learn Logical Joins operator in relational theory and SQL: A Case study**, 1<sup>st</sup> International Conference on Innovative Computing, 2016
61. Ali Raza, Muhammad Shoaib Farooq, Adnan Abid, Ashfaq Ahmed: **Scaffolding Techniques provided to learners in Tools for Learning and Teaching**, 1<sup>st</sup> International Conference on Innovative Computing, (2016)
62. Muhammad Shoaib Farooq, Sher Afzal Khan, Farooq Ahmad, Kamran Abid, Uzma Farooq, Adnan Abid: **A Survey on Diversification Techniques for Unambiguous but Under-Specified Queries**, 2nd International Conference on Computational and Social Sciences (ICCSS) Vol 3: pp: 2849-2854, (2014).
63. Muhammad Shoaib Farooq, Aqsa Ali, Adnan Abid: **What should be taught about arrays in CS2?** 2nd International Conference on Computational and Social Sciences Vol 3: pp: 2904-13. (2014)
64. Nabeel Sabir, Adnan Abid, Shoaib Farooq, Yaser Daanial, Bilal Hassan, Awais Kamran and Aneesa Abbasi: **Constraint based NLP Engine**, 2<sup>nd</sup> International Conference on Computational and Social Sciences (ICCSS-2014) Vol 2: pp:1123-1129. (2014)
65. Mohammad Shoaib Farooq, Sher Afzal Khan, Farooq Ahmad, Saeed Islam, Adnan Abid: **Choice of pedagogical approaches towards first programming language**, 2<sup>nd</sup> International Conference on Computational and Social Sciences (ICCSS) Vol 3: pp: 2811-2816. (2014)
66. Mohammad Shoaib Farooq, Sher Afzal Khan, Farooq Ahmad, Adnan Abid, Saeed Islam: **Pedagogically effective subset of C++**, 2<sup>nd</sup> International Conference on Computational and Social Sciences (ICCSS) Vol 3: pp:2900-2903. (2014)
67. Adnan Abid, Zaheer Ahmad: **Probability Computation for Rank Joins Using Weibull Distribution**, 2<sup>nd</sup> International Conference on Computational and Social Sciences (ICCSS) 2014.
68. Abdul Wahab, Adnan Abid, Muhammad Amjad Iqbal: **Cognitive Storage Model and Mapping with Classical Data Structures**, International Conference on Computational and Social Sciences (ICCSS) 2013.
69. Adnan Abid, Marco Tagliasacchi: **Parallel Data Access for Multi-way Rank Joins**, 11<sup>th</sup> International Conference on Web Engineering (ICWE) 2011.
70. Adnan Abid, Marco Tagliasacchi: **Parallel Data Access for Top-K Pipe Join**, 37<sup>th</sup> International Conference on Very Large Databases (VLDB) Workshops. Workshop on Ranking in Databases (DBRank), Seattle, USA,



August 2011.

71. Adnan Abid, Marco Tagliasacchi: **Top-k Query Processing with Parallel Probing of Data Sources**, In proceedings of 19<sup>th</sup> Italian Symposium of Advanced Database Systems - Sistemi Evoluti per Basi di Dati (**SEBD**) pp. 155-162, 2011.
72. Adnan Abid: **Efficient Reporting for Rank Joins using Probability**, In proceedings of **PhDay**, Politecnico di Milano, Milan, Italy, September 2011.
73. Mamoun Abu Helou, Adnan Abid: **Semantic Measures Based on WordNet using Multiple Information Sources**, Second International Joint Conference on Knowledge Discovery, Knowledge Engineering, and Knowledge Management **IC3K/KDIR**, 2010.
74. S. Ceri, A. Abid, M. Abu Helou, A. Bozzon, D. Braga, M. Brambilla, A. Campi, F. Corcoglioniti, E. Della Valle, D. Eynard, P. Fraternali, M. Grossniklaus, D. Martinenghi, S. Ronchi, M. Tagliasacchi, S. Vadacca: **Search Computing Systems**, In proceedings 18<sup>th</sup> Italian Symposium of Advanced Database Systems - Sistemi Evoluti per Basi di Dati (**SEBD**), pp. 446-453, 2010.
75. Adnan Abid: **Revisiting Multiway Rank Join with Parallel Access**, In proceedings of **PhDay**, Politecnico di Milano, Milan, Italy, 2010.
76. Adnan Abid, Asif Jan, Laurent Francioli, Konstantinos Sfyarakis, Felix Schürmann: **Keyword Based Indexing and Searching over Storage Resource Broker**. On the Move to Meaningful Internet Systems: **GADA**, LNCS, Volume 4804, pp: 1233-1243, 2007.

### Invited Talks

- *Learning Analytics using Big Data for Computing Education*, The 3rd International Conference on Modern Management based on Big Data (MMBD), August 2022, Seoul, Korea
- *Key Note Speech: Role of Academia in Cloud and Data Driven Digital Transformation*, Huawei DevCon, Sep 2022, Lahore, Pakistan.
- *Design Challenges for Big Data Systems an Architectural Perspective*, at DICE-IET March 2020, Comsats University Islamabad, Pakistan.
- *Building an Inclusive Society: Challenges in Developing Tools for the Deaf Community of Pakistan (ICT4D)*, 16<sup>th</sup> International Conference on Frontiers in Information Technology, 2018.
- *Search Computing and Beyond*, International Conference on Advances in Computational Sciences, University of Lahore, Pakistan (Feb 2018)
- *"Building an Inclusive Society: Developing tools for the Deaf Community"* at DICE-IET 2017, Comsats Institute of Information Technology, Lahore, Pakistan (Dec 2017).
- *"Project Centric Approach for Teaching Applied Courses at UG Level"*, University of Management and Technology, Pakistan (Aug 2017).
- *"A Practical Approach for Teaching Computing Courses"*, Innovation and Internationalization in Pakistani Higher Education, University of Management and Technology, Pakistan (March 2017).
- *"Sign Language Translation: English to Pakistan Sign Language Conversion"*, at University of Management and Technology, in International Conference on Inclusive Education 2015.
- *"Provisional Reporting in Rank Joins with Emphasis of Search Computing"* at University of Engineering and Technology, at 8<sup>th</sup> International Conference on Open Source Systems and Technologies (ICOSST), December 2014.
- *"Search Computing: Let us Use Web Data Services for Information Retrieval"* at University of Engineering Technology, at 7<sup>th</sup> International Conference on Open Source Systems and Technologies (ICOSST), December 2013.
- *"The Idea of Search Computing and Ranking in Search Results"* at National University of Computer and Emerging Sciences (NUCES-FAST), Lahore Campus, 2012.

### Editor/Review Committee Member/ Judge/ PhD External Evaluator

Associate Editor IEEE ACCESS with Impact Factor 4.098

Editor, PeerJ Computer Science with Impact Factor 3.1

I have been reviewing scientific papers for the following journals:

- IEEE Transaction on Education
- ACM Transactions on Computing Education

- PLoS ONE; IEEE Access
- Journal of Intelligent Information Systems.
- Journal of Neural Computing and Applications.
- Journal of Software: Evolution and Process
- The Scientific World Journal.
- World Applied Sciences Journal.
- Multimedia Tools and Applications
- I have also reviewed project proposals for **ICTR&D** fund set up by Ministry of IT, Pakistan.
- Judge at: DICE 2017, Softec 2015.
- External Evaluator for many PhD Dissertation and MS thesis defence in different universities in Pakistan.

#### **Conferences Chair/Session Chair/TPC etc.**

- Conference Secretary 1<sup>st</sup> and [3rd IEEE International Conference on Innovative Computing \(IC\)<sup>2</sup>](#), 2016/2019
- Session Chair at 15<sup>th</sup> [IEEE International Conference on Machine Learning Applications](#), (ICMLA), 2016.
- Session Chair at 3<sup>rd</sup> International Conference on Modern Management based on Big Data (MMBD), 2022, Korea
- Conference Secretary [International Conference on Innovative Computing \(IC\)<sup>2</sup>](#), 2016
- TPC Member [International Conference on Computational and Social Sciences \(ICCS\)](#) 2014.
- TPC Member [11<sup>th</sup> International Conference on Frontiers of Information Technology \(FIT\)](#) 2013.
- TPC Member [7<sup>th</sup> International Conference on Open Source Systems and Technologies \(ICOSST\)](#) 2013
- TPC Member of [International Conference on Computational and Social Sciences \(ICCS\)](#) 2013.
- TPC Member [International Workshop on Mining Techniques for/in Service-Oriented Computing \(MTSOC\)](#) 2012.

#### **Conferences and Seminars Attended**

I have attended many international/national conferences and workshops.

- 3<sup>rd</sup> International Conference on Modern Management based on Big Data (MMBD), August 2022, Seoul, Korea
- 3<sup>rd</sup> International Conference on Innovative Computing, UMT, Lahore, 2019.
- 13<sup>th</sup> International Conference on Open Source Systems and Technologies (ICOSST), UET Lahore, 2019.
- ACM SIGCHI 2017, Denver, USA.
- 15<sup>th</sup> IEEE International Conference on Machine Learning Applications, Anaheim, CA, USA, 2016.
- 1<sup>st</sup> International Conference on Innovative Computing, UMT, Lahore, 2016.
- Mapping Education in 21<sup>st</sup> Century, Organized by US-Embassy at Islamabad, 2016.
- 8<sup>th</sup> International Conference on Open Source Systems and Technologies (ICOSST), UET Lahore, 2014.
- 7<sup>th</sup> International Conference on Open Source Systems and Technologies (ICOSST), UET Lahore, 2013.
- 6<sup>th</sup> International Conference on Open Source Systems and Technologies (ICOSST), UET Lahore, 2012.
- International Conference on Web Engineering (ICWE), Cyprus, 2011.
- PhDay 2011, A PhD symposium, Politecnico di Milano, Italy 2011.
- Second Italian Information Retrieval Workshop, Italy, 2011.
- Conference on Digital Libraries, Italy, 2010.
- Second Search Computing Workshop, Italy, 2010.
- First Italian Information Retrieval Workshop, Italy, 2010.
- Sistemi Evoluti per Basi di Dati (SEBD) 18<sup>th</sup> Italian Symposium, Italy 2010.
- First Search Computing Workshop, Italy, 2009.
- PhDay 2010, A PhD symposium, Politecnico di Milano, Italy 2010.

## **PROFESSIONAL EXPERIENCE**

---

### **University of the Punjab, Pakistan (05/2023 – to-date)**

#### **ACADEMIC POSITIONS**

##### **Professor – Department of Data Science, Faculty of Computing and Information Technology (05/2023 – to date)**

- to teach core and advanced computer science courses at UG and PG levels.
- to supervise PhD students and MS thesis.
- to supervise research final year projects for BS/MS/PhD students.

### **Virtual University of Pakistan, Pakistan (12/2021 – May 2023)**

#### **ACADEMIC POSITIONS**

##### **Professor – Department of Computer Science (12/2021 – to date)**

- to direct the development and dissemination of course development for Computing degree programs.
- to teach core and advanced computer science courses at UG and PG levels.
- to supervise PhD students and MS thesis.
- to supervise research final year projects for BS/MS/PhD students.

### **University of Management and Technology, Lahore, Pakistan (02/2014 – to-date)**

#### **ACADEMIC POSITIONS (Department of Computer Science)**

##### **Professor (12/2020 – to date)**

##### **Associate Professor (02/2015 – 11/2020)**

##### **Assistant Professor (02/2014 – 01/2015)**

- to teach core and advanced computer science courses at UG and PG levels.
- to supervise PhD students and MS thesis.
- to supervise research final year projects for BS/MS/PhD students.

#### **ADMINISTRATIVE RESPONSIBILITIES**

##### **Director Center for Advancement of Science and Technology (CAST) (05/2017 – to date)**

At CAST, I worked for fostering the research culture in the School of Systems and Technology, UMT. To this end, I have worked on establishing few research groups in the computing disciplines. Furthermore, I have organized a series of talks by inviting speakers from Academia and Industry.

##### **Chairperson of Department (03/2016-05/2017)**

Managing the administrative affairs of the department including new hiring, course allocation, arrangements of trainings and events.

In my tenure, I organized first ever Conference on Computing in the Department. I also lead the organization of the biggest computer programming event in the history of Pakistan under ACM-ICPC in 2017 at UMT.

##### **Director Academics (02/2015 – 03/2016)**

- to devise a process for smooth execution of courses in a coordinated fashion.
- student counselling and revision of curricula.

### **University of Central Punjab (01/2012 – 02/2014)**

#### **Assistant Professor (01/2012-02/2014)**

Worked as Assistant Professor in the Faculty of Information Technology, UCP Lahore, Pakistan.

- to teach core and advanced computer science courses at UG and PG levels.
- to supervise PhD students and MS thesis.
- manage recruitment of new employees

### **Politecnico Di Milano, Milan, Italy, (01/2009 – 12/2011)**

#### **Research Assistant**

##### **Thesis Title: Top-K queries for Web based data sources.**

Worked on an ERC funded project, Search Computing ( <http://www.search-computing.it>).

I worked on optimization of top-K query processing for Web based data sources. I have proposed algorithms to efficiently process the rank joins for the Web services.

**Government College University, Lahore, Pakistan. (09/2008 – 12/2008)**

**Assistant Director/Assistant Professor**

Assistant Professor in the Department of Computer Science, Government College University, Lahore, Pakistan.  
Main responsibilities were to teach computer science courses, and supervise final year projects.

**Alliances-IT Lahore, Pakistan / Frontiers Research Foundation, Switzerland (06/2007 – 08/2008)**

**Database Architect/Administrator**

An organization working for Frontiers Research Foundation ( [www.frontiersin.org](http://www.frontiersin.org) ), Switzerland.

- System and database requirement analysis, database design, query optimization and database server management and optimization.
- Management of Database team. - Design, manage and optimize Data Warehouse and OLAP.
- Communication with clients and recruitment of new employees.

**Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland. (06/2006 – 2007)**

**Research Assistant**

I worked on Blue Brain Project (<http://bluebrain.epfl.ch/>) while working in collaboration with computer scientists and Neuro-scientists.

I proposed and implemented a distributed indexing system over SRB for efficient data retrieval for large scale distributed data stored based on the experiments conducted by the neuroscientists.

**National University of Science and Technology, Islamabad, Pakistan. (11/2004 – 05/2006)**

**Research Assistant (MS Leading to PhD Scholar)**

I worked with Database research group and started defining my research area in collaboration with database team at EPFL, and worked on prototyping of distributed storage management system for scientific data.

**University of the Punjab, Lahore, Pakistan (07/2002 – 06/2004)**

**Database Manager**

Major Responsibilities:

- Database Server Administration. Oracle 9i, SQL Server 2000.
- Conducting Workshops on Distributed Database Systems & Data Warehousing.