

CURRICULUM VITAE

PERSONAL RECORD

Name: Dr. Muhammad Akhtar Ali, BSc, MSc, PhD
Current Post: Senior Lecturer in Computing / Computer Science
Salary: British Pounds £45,155 per year, £3763 per month
Address (work): Northumbria University, School of Computing, Engineering, & Information Sciences
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Languages: English/Pukhto/Urdu (fluent in all aspects), Arabic (good in reading, some writing/speaking)
Age: 40
Nationality: British

ACADEMIC RECORD

- ◆ **PhD Computer Science** 1997 (Sep) – 2002 (Sep) Department of Computer Science, University of Manchester, UK.
Thesis Title: Incremental Maintenance of Materialized Views in Object-Oriented Databases
Research Keywords: Materialized Views and Maintenance, Object-Oriented Databases, Data Warehousing, Query Optimization [Supervisor: Professor Norman W Paton].
- ◆ **MSc. Computer Science** 1993 (April) – 1995 (May) (**with distinction**) Department of Computer Science, University of Peshawar, Peshawar, N.W.F.P, Pakistan.
- ◆ **BSc. (Computer Science)** 1990 (Sep) – 1992 (Sep) Islamia College Peshawar, University of Peshawar, Pakistan.

PROFESSIONAL CERTIFICATES (*Successful Completion*)

- ◆ *Programming with ADO .NET framework* from Microsoft, UK (June 2004)
- ◆ *Programming with XML in the MS .NET framework* from Microsoft, UK (Apr 2004)
- ◆ *Building COM+ Applications Using MS .NET Enterprise Services* from Microsoft, UK (Jan 2004)
- ◆ *Developing XML Web Services with MS ASP.NET* from Microsoft, UK (Jan 2004)
- ◆ *Introduction to and Programming with C# (MS .NET)* from Microsoft, UK (Dec 2003, Jan 2005)
- ◆ *Oracle 9i DBA (I)* from Reach Training (JoraPh Consulting), UK (Sep 2003)
- ◆ *Oracle 9i SQL* from Reach Training (JoraPh Consulting), UK (Jul 2003)
- ◆ *Java Programming* from Sun Microsystems, UK (Jun 2001).
- ◆ *Object-Oriented Analysis and Design with UML* from Learning Tree, UK (Jul 2001).
- ◆ *Oracle Developer 2000* from Ora-Tech Systems Ltd. Pakistan (July 1997).
- ◆ *Supporting Windows NT 3.51* from AT&T, Pakistan (April 1996).
- ◆ *Informix for Developers* from Innovative Computers, Pakistan (Mar 1996).

EMPLOYMENT RECORD

- ◆ Aug 2000 to Date: Senior Lecturer in School of Computing, School of Computing, Engineering, & Information Sciences, Northumbria University, Newcastle upon Tyne, UK
- ◆ Sep 1997 to July 2000: Student Demonstrator in different BS/MSc degree courses in University of Manchester, UK.
- ◆ Sep 1996 to Sep 1997: Teaching Assistant at Faculty of Computer Science, Ghulam Ishaq Khan Institute, Topi, Pakistan.
- ◆ April 1996 to Aug 1996: Systems Analyst, Army Welfare Trust, Rawalpindi, Pakistan.
- ◆ Jan 1996 to March 1996: Systems Analyst cum Programmer at EGS, Peshawar, Pakistan.
- ◆ May 1995 to Dec 1995: Project Programmer, Ghulam Ishaq Khan (GIK) Institute, Topi, and Pakistan.
- ◆ Jan 1994 to Feb 1995: Part Time Instructor at BRAINS Computer Academy, Peshawar, Pakistan.

CURRENT ROLES & RESPONSIBILITIES

Research:

- ◆ Object-Identification for Database Design, Database Migration, Database Performance Tuning.

Teaching:

- ◆ Teaching modules/courses at BSc and MSc levels, e.g., *Database Modeling, Advanced Databases, Relational Databases, Object-Oriented Analysis and Design, Data Warehousing, Research Methods, Software and Data Modeling, Application Integration Technologies*, etc.

Curriculum Development:

- ◆ Developed various modules/courses for teaching on BSc and MSc programmes in computing/computer sciences at Northumbria University.

Recruitment and Guidance Tutorship:

- ◆ Responsible for marketing postgraduate programmes (e.g., MSc Computing and IT, MSc Computer Science, MSc Web Computing) and providing help to prospective postgraduate students in choosing the right programme.
- ◆ Giving guidance to students on personal as well as academic related problems solving.

Supervision and Examination:

- ◆ Successfully supervised BSc (more than 50) and MSc (more than 30) individual research and development projects.
- ◆ Successfully supervised two PhD projects (Northumbria):
 - Pensri Amornsinlaphachai (2007) *Updating Semi-structured Data* [Second Supervisor]
 - Abdelsalam Maatuk (2009) *Migrating Relational into Object-Based and XML Databases* [Principal Supervisor]
- ◆ Examined three MPhil and PhD projects at mid-point of the standard completion (after 18 months of study) (Northumbria).

International Collaborative and Scholarly Development:

- ◆ Visited several institutions in developing countries (e.g., Pakistan) for establishing academic and research links and signed memorandum of understanding (MOUs).
- ◆ Visited a newly established University (Bannu, Pakistan) as a visiting scholar under Higher Education Commission of the Government of Pakistan (August 2008). Conducted staff and student training in the field of database management systems and research methods. Facilitated a pilot scheme whereby graduates of Bannu University will be given advanced entry into MSc Computer Science and Informatics programmes.

PUBLICATIONS

- ◆ Abdelsalam Maatuk, M. Akhtar Ali, B. Nick Rossiter: Re-engineering relational databases: the way forward. ISWSA 2011: 17 <http://computing.unn.ac.uk/staff/cgma2/papers/ISWSA.pdf>
- ◆ Abdelsalam Maatuk, M. Akhtar Ali and Nick Rossiter (2010). Converting Relational Databases into Object-relational Databases. *Journal of Object Technology (JOT)*, Volume 9, No 2, pp. 145-16, March-April 2010. http://www.jot.fm/issues/issue_2010_03/article3.pdf
- ◆ Abdelsalam Maatuk, M. Akhtar Ali and Nick Rossiter (2010). ‘Semantic Enrichment: The First Phase of Relational Database Migration’, in Tarek Sobh (editor) *Innovations and Advances in Computer Sciences and Engineering*. Netherlands: Springer, pp. 373-378. <http://www.springerlink.com/content/p354766032616g42/fulltext.pdf>
<http://computing.unn.ac.uk/staff/cgma2/papers/CISSE2008.pdf>
- ◆ Abdelsalam Maatuk, M. Akhtar Ali and Nick Rossiter. Relational Database Migration: A Perspective. DEXA 2008, Lecture Notes in Computer Science, 5181, pp. 676-683 (2008). http://computing.unn.ac.uk/staff/cgma2/papers/RDBM_Dexa.pdf
- ◆ Abdelsalam Maatuk, M. Akhtar Ali and Nick Rossiter. An Integrated Approach to Relational Database Migration. In *the Proceeding of International Conference on Information and Communication Technologies-2008 (IC-ICT '08)*, Bannu, N.W.F.P, Pakistan, pp. 01-06 (2008). <http://computing.unn.ac.uk/staff/cgma2/papers/icict2008.pdf>
- ◆ Pensri Amornsinlaphachai, Nick Rossiter and M. Akhtar Ali. Storing Linked XML Documents in Object-Relational DBMS, Update Language into SQL, *Journal of Computing and Technology – CIT* Volume 14, No 3, 225-241 (2006). <http://computing.unn.ac.uk/staff/cgma2/papers/citR607.pdf>
- ◆ Pensri Amornsinlaphachai, Nick Rossiter and M. Akhtar Ali. Translating XML Update Language into SQL, *Journal of Computing and Technology – CIT* 14(2) 91-110 (2006). <http://computing.unn.ac.uk/staff/cgma2/papers/R606.pdf>
- ◆ Pensri Amornsinlaphachai, Nick Rossiter and M. Akhtar Ali. Updating XML using Object-Relational Database, BNCOD 22, Sunderland University, 5-7 July, Lecture Notes in Computer Science # 3567 155-160 (2005). <http://computing.unn.ac.uk/staff/cgma2/papers/bncod22.pdf>
- ◆ M. Akhtar Ali, Alvaro A. A. Fernandes and Norman W. Paton. MOVIE: An Incremental Maintenance System for Materialized Object Views. *Data and Knowledge Engineering (DKE)* Volume 47, No 2, November (2003). http://computing.unn.ac.uk/staff/CGMA2/ali_fernandes_paton.ps
- ◆ M. Akhtar Ali. *Incremental Maintenance of Materialized Views in Object-Oriented Databases*. PhD Thesis. University of Manchester, Manchester, September (2002). <http://computing.unn.ac.uk/staff/CGMA2/thesis.pdf>
- ◆ M. Akhtar Ali, Norman W. Paton and Alvaro A. A. Fernandes. An Experimental Performance Evaluation of Incremental Materialized View Maintenance in Object Databases. *Proceedings of DaWaK Conference*, Munich, Germany (2001). <http://computing.unn.ac.uk/staff/CGMA2/dawak2001.ps>
- ◆ M. Akhtar Ali, Alvaro A. A. Fernandes, Norman W. Paton. Incremental Maintenance of Materialized OQL Views. In *the proceedings of International Workshop on Data-warehousing and OLAP (DOLAP2000)*, Washington DC, USA (2000). <http://computing.unn.ac.uk/staff/CGMA2/dolap2000-acm-formatted.ps>
- ◆ M. Akhtar Ali, Alvaro A. A. Fernandes and Norman W. Paton. An Algebraic Approach to Materialized Views Maintenance in Object Databases. *Proceedings of Workshop on High Performance Object Databases (HIPOD)* (2000). <http://computing.unn.ac.uk/staff/CGMA2/hipod2000.ps>
- ◆ Ijaz Ali KaKa Khel and M. Akhtar Ali. Parallel computing for less. *IEEE Potentials*, Volume 18, No. 2, April/May (1999).

RESEARCH & DEVELOPMENT INTERESTS

- ◆ Data Warehousing
- ◆ Materialized Views Maintenance
- ◆ Object-Oriented/Object-Relational Databases
- ◆ Data/Information Integration
- ◆ Web Services
- ◆ Interoperability
- ◆ Object-Oriented Analysis and Design
- ◆ Query Optimization

SOFTWARE DEVELOPMENT EXPERIENCE

- ◆ Supervised the development project of an automated database migration system, which migrates a relational database (both schema and data) into equivalent object-oriented, object-relational and XML databases.
Role: Supervisor / Principal Investigator, **Development Tools/Environment:** Oracle 10g and Java.
- ◆ Designed and developed a system called *MOVIE* (Materialized Object-oriented VIEWS) as a research product of my PhD.
Role: Designer and Developer, **Development Tools/Environment:** lambda-DB, SHORE, C++, Linux.
- ◆ Developed Software System *PRAMS* (Personnel Responsibilities and Activities Management System) for the GIK Institute, Topi, N.W.F.P, Pakistan. **Role:** Team Member, Programmer, **Development Tools/Environment:** Informix, Aix
- ◆ Developed *Lexical Analyzer* in C language. **Role:** Student, Programmer
- ◆ Designed and Developed *Inventory and Accounts System* for Umerzai Electronics, Peshawar. **Role:** Analyst cum Programmer, **Development Tools/Environment:** DBASE III+, MS-DOS
- ◆ Gave maintenance support and incorporated new extensions in the *Accounts Management System*, SRSC, Peshawar.
Role: Analyst cum Programmer, **Development Tools/Environment:** FoxPro, MS-DOS
- ◆ Designed and Developed Army Welfare Trust (AWT) Agricultural Farms Division System for the AWT's MD Management Specific Reports. **Role:** Team Leader, Analyst, **Development Tools/Environment:** Informix, NewEra, Windows 95/NT.

COMPUTING SKILLS

Operating System/Environment: MS-Windows NT/XP/7, Unix/Aix/Linux

Programming Languages: C/C++/C#, Java, Perl, Visual Basic, Pascal, XML

Operating System/Environment: MS-Windows NT/XP/7, Unix/Aix/Linux

Database Programming Languages/Development Kits:

- ❖ Visual Studio .Net
- ❖ Informix-4GL
- ❖ SQL
- ❖ Oracle PL/SQL
- ❖ Informix-NewEra
- ❖ ADO/ ASP .NET
- ❖ POET C++
- ❖ POET Java
- ❖ ODL/OQL
- ❖ Oracle Developer

DBMS (Relational, Object-Oriented, Object-Relational):

- ❖ Informix
- ❖ Oracle 8i/9i/10g/11g
- ❖ MySQL
- ❖ POET
- ❖ Lambda-DB
- ❖ Access

Modelling/Presentation/Word Processing: UML, Rational Rose, Visio, MS-Office, Latex

REFERENCES

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