Dr. Ayaz ul Hassan Khan

(HEC Approved PhD Supervisor)
A-314 Block 2 Gulistan-e-Jauhar,
Karachi, Pakistan
Phone: +923318470261
ayazhk@gmail.com, ayaz.hassan@sse.habib.edu.pk

Personal Profile

A skilled techno master and an accomplished computer scientist with a diverse experience of 15 years in industry and academics. I contributed positively to several universities and professional organizations with my excellent problem-solving skills.

As a computer scientist with interest in high performance computing, parallel programming, and deep learning, I am an author of 20+ publications in reputed journals and conferences along with a book on parallel processing. I have successfully completed several research funded projects and few more are in process of accumulated worth of about half a million dollars.

As a technology professional, I am experienced to deal with many international clients including Dubai Financial Market, Dubai Municipality, Emirates, Comets Services, Doha Securities Market, Tensator UK, CreditOne Bank of USA, Quadrem Global Supply Chain Solutions, American Honda Motor Company, BMW, Nautilus Incorporation, Bentley Motors, At&T, and VolksWagen to provide them cutting edge solutions for their day-to-day business processes. Some examples of his services include development of Queuing Management Systems, Online Ticker Systems, Self-Service KIOSKs, ETL processes and reporting, etc.

I am also an occasional traveler at both local and international level. I have travelled 60+ cities of 7 countries in 3 different continents. I have achieved a Local Guide – Level 6 on Google maps with 5 star rating and accumulated 1953 points for his travel contributions.

Education

King Fahd University of Petroleum and Minerals Sep 2010 – Dec 2014
PHD, Computer Science and Engineering, 3.875 CGPA

Lahore University of Management Sciences Sep 2003 – Dec 2004
MS, Computer Science (major: Networking and Distributed Systems), 3.61 CGPA

NED University of Engineering and Technology Jan 1999 – Feb 2003
BCIT, Computer Science and IT, 2nd Position (90%)

PhD Dissertation Summary

Title: RT-CUDA: A SOFTWARE TOOL FOR CUDA CODE RESTRUCTURING

Recent development in Graphic Processing Units (GPUs) has opened a new challenge in harnessing their computing power as a new general-purpose computing paradigm with its CUDA parallel programming. However, porting applications to CUDA remains a challenge to average programmers. In this thesis work we have developed a restructuring software compiler (RT-CUDA) with best possible kernel optimizations to bridge the gap between high-level languages and the machine dependent CUDA environment. RT-CUDA is based upon a set of compiler optimizations. RT-CUDA takes a C-like program and convert it into an optimized CUDA kernel with user directives in a

configuration file for guiding the compiler. While the invocation of external libraries is not possible with OpenACC commercial compiler, RT-CUDA allows transparent invocation of the most optimized external math libraries like cuSparse and cuBLAS. For this, RT-CUDA uses interfacing APIs, error handling interpretation, and user transparent programming. This enables efficient design of linear algebra solvers (LAS). Evaluation of RT-CUDA has been performed on Tesla K20c GPU with a variety of basic linear algebra operators (M+, MM, MV, VV, etc.) as well as the programming of solvers of systems of linear equations like Jacobi and Conjugate Gradient. We obtained significant speedup over other compilers like OpenACC and GPGPU compilers. RT-CUDA facilitates the design of efficient parallel software for developing parallel simulators (reservoir simulators, molecular dynamics, etc.) which are critical for Oil & Gas industry in KSA. We expect RT-CUDA to be needed by many KSA industries dealing with science and engineering simulation on massively parallel computers like NVIDIA GPUs.

This dissertation work is part of the funded project No. 12-INF3008-04 as part of the National Science, Technology and Innovation Plan (NSTIP) by King Abdulaziz City of Science and Technology (KACST) through the Science and Technology Unit at King Fahd University of Petroleum and Minerals (KFUPM).

Additional Qualifications/Short Courses/Certifications

- Learning to Teach Online (Coursera/University of New South Wales, Australia)
- The Data Scientist's Toolbox (Coursera/John Hopkins University, USA)
- DLI Platform Course for Instructors (NVIDIA Deep Learning Institute)
- Fundamentals of Accelerated Computing with CUDA C/C++ (NVIDIA Deep Learning Institute)
- 4MAT Instructional Design Training
- SAP Basics Course
- SAP: Introduction to ABAP Programming Course
- Vision Retreat
- Strategic Negotiation Skills
- Strategic Visions
- Strategic Time Management
- Microsoft Certified Technology Specialist
- Oracle Certified Professional (OCP) DBA Track.

Employment Details:

Teaching Experience – 15 yrs (Post PhD – 5 yrs):

- **Assistant Professor, Habib University - Pakistan** (Jan 2020 – Present)
- **Assistant Professor, Karachi Institute of Economics and Technology (KIET) – Pakistan** (Jan 2018 – Jan 2020)
- **Assistant Professor, Qassim University – Saudi Arabia** (Aug 2015 - Jan 2018)
- **Lecturer – B, King Fahd University of Petroleum and Minerals – Saudi Arabia** (Sep 2010 – Jan 2015)
- **Assistant Professor, FAST – NU – Pakistan** (Aug 2009 – Jul 2010)
- **Visiting Faculty, Mohammad Ali Jinnah University – Pakistan** (Jun 2007 – May 2009)
- **Assistant Professor, Mohammad Ali Jinnah University – Pakistan** (Aug 2006 – Jun 2007)
- **Visiting Faculty, Mohammad Ali Jinnah University – Pakistan** (Aug 2005 – Jun 2006)

Industry Experience – 4 yrs:

- **Software Engineer – Database Architecture/Application Development @ TRG (The Resource Group) – Pakistan** (Jul 2007 – Jul 2009)
- **Software Engineer – Application Development @ Wavetec Private Limited – Pakistan** (Jan 2005 - Jul 2006)

Note: Please see page # <10> of this document for further details on my industry work experience.

Teaching Experience Details:

Taught Courses:

- **Undergraduate Level:**
  1. Data Structures and Algorithms
  2. Database Systems
  3. Computer Architecture
  4. GPU Accelerated Computing
  5. Operating Systems
  6. Parallel and Distributed Computing
  7. Concepts of Algorithms and Computer Programming
  8. Assembly Language
  9. Discrete Structures
  10. Selected Topics in Computer Science (Parallel Computing)
  11. Distributed Systems and Parallel Processing
  12. Computer Organization and Assembly Language
  13. Object Oriented Programming
  14. Advanced Computer Programming
  15. Computer Logic and Design
  16. Introduction to Computer Science
- **MS/PhD Level:**
  1. Parallel Computing
  2. GPGPU Programming
  3. Distributed Systems
  4. Advanced Operating Systems
  5. Programming Methodology

Curriculum Contributions:

Following new courses are contributed in the university curriculum.

- **Undergraduate Level:**
  1. Parallel and Distributed Computing
  2. Selected Topics in Computer Science (Parallel Computing)
  3. Distributed Systems and Parallel Processing
  4. GPU Accelerated Computing
- **MS/PhD Level:**
  1. Parallel Computing
  2. GPGPU Programming

Conducted Workshops:

- 4MAT Instructional Design (For Faculty)
- CUDA Programming (For Students and Faculty)
- Fundamentals of Accelerated Computing using CUDA C/C++
- R Programming for Data Science

Administrative Contributions/Academic Committee Work:

- Curriculum Planning Committee Member
- Faculty Hiring Committee Member
- Kaavish (FYP) Working Group Member
- IS Course Policy Development Committee Member
- Online Assessments Policy Development Committee Member
- Online Attendance Policy Development Committee Member
- Final Year Project (FYP) Examination Process Development
- COOP Training Procedures Preparation
- Student Advisory Services
- Student Batch Coordinator
- Final Year Project Advisor
- MS Research Survey Advisor

Advisory Board/Committee/Club Memberships:

- **Chief Consultant - High Performance Computing & Deep Learning,** Progmatic – A startup with NVIDIA Inception Program (https://progmatic.pk/team/)
- **Member,** RISC-V Foundation
- **Academic Council Member,** Indus University
- **Member - Board of Advanced Studies and Research,** Indus University
- **Member - Review Board,** KIET Journal of Computing and Information Sciences (KJCIS) (http://kjcis.pafkiet.edu.pk/)
- **Member,** Technical Committee on Computer Architecture (TCCA), IEEE Computer Society
- **Member,** Technical Committee on Parallel Processing (TCPP), IEEE Computer Society
- **PC Member,** 52nd ACM Technical Symposium on Computer Science and Education (http://sigcse2021.sigcse.org/)
- **Chair,** Marketing Committee, 2019 International Conference on Computing and Information Sciences (ICCIS 2019) (http://iccis.pafkiet.edu.pk/)
- **Member,** Technical Program Committee, 2019 International Conference on Computing and Information Sciences (ICCIS 2019) (http://iccis.pafkiet.edu.pk/)
- **Patron,** Computer Science and Engineering Club, Habib University

Selected Students' Projects/Thesis Supervision

Title	Type	Status
Classification of Roman Urdu and English tweets, into multi-class model using KNN and Semi-Supervised Learning	MS Thesis	Completed A research paper, "Classification of multi-lingual tweets, into multi-class model using Naïve Bayes and semi-supervised learning", published in Multimedia Tools and Applications, Springer Nature, ISI Impact Factor – 2.101

Cancer Detection through Deep Learning	PhD Thesis	On going A research paper, "A Parallelized Approach to Predict the Secondary Structure of RNA", submitted to Mehran University Research Journal of Engineering and Technology, *ISI Emerging Sources*
DeepKSE: Prediction and Simulation of KSE using Deep Learning, Sentimental and Technical Analysis	Final Year Project	On going
Enhancing the Efficiency of Deep Learning in Big Data Analytics	Funded Research Project	Completed A research paper, "Software Abstractions for Large-Scale Deep Learning Models in Big Data Analytics", published in International Journal of Advanced Computer Science and Applications, *ISI Emerging Sources*
A Clustered k-Nearest Neighbours Approach for Large-Scale Classification	MS Course Project	Completed A research paper, "ck-NN: A Clustered k-Nearest Neighbours Approach for Large-Scale Classification", published in ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal, *ISI Emerging Sources*

Research Contributions

Completed Funded Research Projects:

Project Title: Enhancing the Efficiency of Deep Learning in Big Data Analytics

Funded By: Deanship of Scientific Research, Qassim University (Project No. 1374-coc-2016-1-12-S) (Project Budget: SAR 50,400)

Recent advances in many-core architectures opened a new opportunity in harnessing their computing power for general purpose computing. The goal of big data analytics is to analyze datasets with high in volume, velocity, and variety for large-scale business intelligence problems. These workloads are normally processed with the distribution on massively parallel analytical systems. Deep learning is part of a broader family of machine learning methods based on learning representations of data. Deep learning plays a significant role in the information analysis by adding value to the massive amount of unsupervised data. A core domain of research is related to the development of deep learning algorithms for auto-extraction of complex data formats at higher level of abstraction using the massive volumes of data. In this project, we are focusing on exploration of parallel algorithms, optimization techniques, tools and libraries related to big data analytics and deep learning on many-core architectures like NVIDIA GPUs. We will also develop a set of library routines optimized for GPUs using CUDA programming with multi-node execution capabilities for the deep learning algorithms related to big data analytics. The software library will be available as open source to maximize its use in academia and industry. We will perform data analytics using the designed library routines with open datasets from www.data.gov.sa in Health, Transport and Communication, Education and Training.

Project Title: Enhancing the Efficiency of Massively Parallel Programs in Computational Science and Engineering Applications

Funded By: King Abdulaziz City of Science and Technology, Saudi Arabia (Project No. 12-INF-3008-04)
(Project Budget: SAR 955,000)

Massively Parallel Computing is gaining ground in high-performance computing. CUDA (an extension to C) is most widely used parallel programming framework for general purpose Graphic processing Units (GPUs). However, the task of writing optimized CUDA programs is complex even for experts. We are proposing to develop an automatic restructuring to optimize CUDA programs for computational science and engineering applications with following features:

- Identifying the condition for maximizing utilization of the GPU resources and establishing the relationships between the influencing parameters.
- Developing algorithms that explore possible tiling solutions with coalesced memory access and resource optimizations that best meet the identified restructuring specifications. For this we will tailor the GPU constraints to achieve maximum performance such as the memory usage (global memory and shared memory), number of blocks, and number of threads per block. A restructuring tool (R-CUDA) will be developed to enable optimizing the performance of CUDA programs based on the restructuring specifications.
- Building a 2-D Fluid Flow simulator based on the Navier-Stokes Equations for fixed boundary conditions. The simulator code will be optimized using the above restructuring tool to expose maximum data parallelism in dense and sparse linear algebra solvers.
- Extensive testing of the tool using benchmarks from the LAPACK – BLAS library such as DGEMM, SGEMM, CAXPY and check for correctness. Also the use of profiling tools such as CUDA Visual Profiler, Parallel Nsight, TotalView to verify the restructuring specifications. The simulator will be tested and validated using typical test cases.

The major outcomes of this project are: 1) an automatic restructuring tool for optimizing the performance of CUDA programs focusing on dense and sparse linear algebra solvers, (2) an optimized 2-D Fluid Flow simulator based on the Navier-Stokes Equations for fixed boundary conditions, and (3) a research lab in Massively Parallel Computing and a graduate course in Computational Science and Engineering.

Our proposal is to develop a restructuring tool to ease the process of writing efficient CUDA programs and to use the tool to parallelize the 2-D Fluid Flow simulation based on the Navier-Stokes Equations. We want to build the expertise and the know-how that will lead to efficiently writing parallel code for scientific simulators to serve the graduate research program and the Oil and Gas industry in the kingdom of Saudi Arabia.

Prospective Funded Research Projects:

Project Title: Development of Scalable GIS Applications
(Submitted to HEC Pakistan for National Center for GIS and Space Applications)

(Project Budget: PKR 34.375 million)

Recent advances in sensing and navigation technologies with emerging applications produce geospatial data at a rapid growth having high volume and variety. These include satellite imagery data with spatial, temporal and spectral resolutions, point-cloud data with rich structural information generated from airborne and mobile radar sensors, and accumulated GPS traces from a huge number of mobile devices equipped with locating and navigation capabilities. Data processing of such a huge and variable dataset require high-end computing facilities and processing architectures. Similarly, polygons derived from point data clustering (e.g., lidar point clouds, GPS locations) and raster data segmentations (e.g., satellite and airborne remote sensing imagery) are

likely to be even larger in volumes and computing-intensive. To efficiently process these large-scale, dynamic and diverse geospatial data and to effectively transform them into knowledge, a whole new set of data processing techniques are thus required.

The massive data parallel computing power provided by inexpensive commodity Graphics Processing Units (GPUs) makes large-scale spatial data processing on GPUs and GPU-accelerated clusters attractive from both a research and practical perspective.

Our research focuses on the following goals in this application domain:

- Data parallel designs for several geospatial data processing techniques such as spatial indexing, spatial joins, and several other spatial operations including polygon rasterizations, polygon decomposition, and point interpolation
- The data parallel designs are further scaled out to distributed computing nodes by integrating single-node GPU implementations with High-Performance Computing (HPC) cluster and the new generation in-memory Big Data systems such as Google's Bigtable
- Development of an integrated framework with multiple GPU-based geospatial processing modules into an open system that can be shared by the community.

Project Title: Towards Smart Medical Services in Cancer Detection with High Accuracy and Efficiency using Deep Learning Approaches

(Project Budget: SAR 42,400)

Cancer has become a leading cause of death worldwide. It is the 2nd leading cause of death in the United States. The most common types of cancer in males are lung cancer and prostate cancer, whereas in females, it is breast cancer and colorectal cancer. In Saudi Arabia, colorectal cancer is the most common type of cancer in men, whereas it is second most common in women. Early detection of cancer is of vital importance and greatly enhances the chances of running a successful treatment plan. Computer Aided Diagnosis (CAD) systems are applied to detect various kinds of cancer. Recently, deep learning has been applied for breast cancer classification giving an accuracy of 99.68%. In this project, we aim to create a data set of medical images for training, validation and testing. We would also develop parallel deep learning algorithms for Graphics Processing Units (GPUs) so as to classify cancer patients. Our aim is to come up with smart algorithms having better efficiency along with a higher accuracy.

Publications

Journal Papers:

1. Uzma Afzal, Tariq Mehmood, **Ayaz H. Khan**, Sadeeq Jan, Raihan ur Rasool, Ali M. Qamar, Rehan Ullah Khan, "Feature Selection Optimization in Software Product Lines" in IEEE Access, vol. 8, pp. 160231-160250, 2020, doi: 10.1109/ACCESS.2020.3020795 [Link]
2. **Ayaz H. Khan**, Muhammad Zubair, "Classification of multi-lingual tweets, into multi-class model using Naïve Bayes and semi-supervised learning", Multimedia Tools and Applications, Springer Nature, Aug 2020, doi.org/10.1007/s11042-020-09512-2 [Link]
3. ULLAH, Rafi; **KHAN, Ayaz H.**; EMADUDDIN, S.M.. ck-NN: A Clustered k-Nearest Neighbours Approach for Large-Scale Classification. ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal, Salamanca, v. 8, n. 3, p. 67-77, aug. 2019. ISSN 2255-2863. Available at: [Link]. doi:10.14201/ADCAIJ2019836777.
4. Mayez A. Al-Mouhamed, **Ayaz H. Khan**, and Nazeeruddin Mohammad, "A Review of CUDA Optimization Techniques and Tools for Structured Grid Computing", Computing Journal, Springer, First Online, doi: https://doi.org/10.1007/s00607-019-00744-1, Jul 2019 [Link]

5. Ayaz H Khan, Ali Mustafa Qamar, Aneeq Yusuf and Rehanullah Khan, “Software Abstractions for Large-Scale Deep Learning Models in Big Data Analytics” International Journal of Advanced Computer Science and Applications(IJACSA), 10(4), 2019. http://dx.doi.org/10.14569/IJACSA.2019.0100469
6. Mayez Al-Mouhamed and **Ayaz H. Khan**, “SpMV and BiCG-Stab Optimization for a Class of Hepta-Diagonal Sparse Matrices on GPU”, The Journal of Supercomputing, pp 1-35, Published Online 24 Mar 2017, DOI: 10.1007/s11227-017-1972-3 [Link]
7. **Ayaz H. Khan,** Mayez Al-Mouhamed, Muhammed Al-Mulhem, and Adel F. Ahmed, “RT-CUDA: A Software Tool for CUDA Code Restructuring”, International Journal of Parallel Programming, pp 1-44, Published Online 13 May 2016, DOI: 10.1007/s10766-016-0433-6
8. **Ayaz ul Hassan Khan**, Mayez Al-Mouhamed, Allam Fatayer, and Nazeeruddin Mohammad, “Optimizing the Matrix Multiplication Using Strassen and Winograd Algorithms with Limited Recursions on Many-Core”, International Journal of Parallel Programming, Vol. 44, No. 4, 2016, pp 801-830. DOI: 10.1007/s10766-015-0378-1
9. Mayez Al-Mouhamed, and **Ayaz ul Hassan Khan**, "Exploration of Automatic Optimisation for CUDA Programming", International Journal of Parallel, Emergent, and Distributed Systems (IJPEDS), Vol. 30, No. 4, 2015, pp 309-324. DOI: 10.1080/17445760.2014.953158
10. **Ayaz ul Hassan Khan**, M. A. Al-Mouhamed, A. Almousa, A. Fatayar, A. Baqais, and M. Assayony, “Padding Free Bank Conflict Resolution for CUDA-Based Matrix Transpose Algorithm”, International Journal of Networked and Distributed Computing, Vol. 2, issue 3, pp 124-134, DOI: doi:10.2991/ijndc.2014.2.3.2.
11. Basem Al-Madani, **Ayaz ul Hassan Khan**, and Zubair A. Baig, "A Novel Mobility-Aware Data Transfer Service (MADTS) Based on DDS Standards", The Arabian Journal of Science and Engineering, Vol. 39, No. 4, 2014, pp 2843-2856. DOI: 10.1007/s13369-014-0944-7

Conference Papers/Posters:

1. **Ayaz H. Khan,** "Parallel Implementation of Predicting RNA using LR Parsing in MPI", Proceedings of International Symposium on Recent Advances in Electrical Engineering, August, 2019.
2. **A. H. Khan**, T. Kazmi, and N. Majeed, "Conflict - Free Replication Datatype using Data Distribution Service", Proceedings of 3rd Asian Conference on Science, Technology and Medicine, Dubai UAE, Feb-2019.
3. **Ayaz H. Khan**, “Optimization Specifications for CUDA Code Restructuring Tool”, 7th High Performance Computing – Saudi Arabia (HPCSaudi2017) Conference at King Abdullah University of Science and Technology (KAUST), Saudi Arabia, 2017. ***(Third Best Poster Award)*** ***[pdf]***
4. **Ayaz ul Hassan Khan**, Mayez Al-Mouhamed, and Allam Fatayar, “Optimizing Strassen Matrix Multiply on GPUs”, 16th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD 2015).
5. **Ayaz ul Hassan Khan**, Mayez Al-Mouhamed, and Lutfi A. Firdaus, “Evaluation of Global Synchronization for Iterative Algebra Algorithms on Many-Core”, 16th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD 2015).
6. **A. H. Khan**, M. A. Al-Mouhamed, A. Almousa, A. Fatayar, A. R. Ibrahim, and A. J. Siddiqui, “AES-128 ECB Encryption on GPUs and Effects of Input Plaintext Patterns on Performance”, 15th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD 2014), Las Vegas, USA. [link]
7. **A. H. Khan**, M. A. Al-Mouhamed, A. Almousa, A. Fatayar, A. Baqais, and M. Assayony, “Padding

Free Bank Conflict Resolution for CUDA-Based Matrix Transpose Algorithm", 15th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD 2014), Las Vegas, USA. [link]

8. Mayez Al-Mouhamed and **Ayaz ul Hassan Khan**, "Exploration of Automatic Optimization for CUDA Programming", 2nd IEEE International Conference on Parallel, Distributed and Grid Computing, India, PDGC2012, 2012. [link]. ***(Second Best Conference Paper Award)***
9. **Ayaz ul Hassan Khan** and Ahmed Tariq Sheikh, "LP Formulation of Thermal Management of a Biosensor Network", Third Scientific Student Conference, Saudi Arabia, April 2012. [poster]
10. **Ayaz ul Hassan Khan** and Muhammad Shoieb Arshad, "Performance Improvement of Overlay Networks for {P2P} Systems", 3rd International Conference on Intelligent Systems, Modelling and Simulation in Malaysia, ISMS2012, 2012. [link]
11. Shafiqur Rehman, Aftab Ahmad, Huseyin Saricimen, Luai M. Al-Hadhrami, Shamsuddin Khan, and **Ayaz ul Hassan Khan,** "Development of a Web-Based Corrosion Cost Inventory System for Saudi Arabia", NACE International Corrosion 2012 Conference and Expo.
12. **Ayaz ul Hassan Khan,** "Storing Synopsis of Data Events", Second Scientific Student Conference, Saudi Arabia, March 2011. [poster]
13. Muhammad Yousuf Bawany, Dr. Asim Karim, **Ayaz-ul-Hassan Khan**, Muhammad Sibghatullah Siddiqui, 'Outlier Detection in Evolving Data Streams: An Evaluation of the LOADED Algorithm', 3rd ACM International Conference on Intelligent Computing and Information Systems - ICICIS 2007, Egypt, March 15-18, 2007

Book / Book Chapters / Monographs:

1. **Ayaz ul Hassan Khan**, "Investigate and Parallel Processing using E1350 IBM eServer Cluster", LAMBERT Academic Publishing, 2012. [Amazon Link]

Professional Skills

- Research and Development
- Project Management
- System Support
- Time Management
- Team Management
- People Coordination
- Leadership
- Flexibility

Knowledge Areas

I have got adequate knowledge of the following tools and concepts:

- Python MRJobs
- Hadoop Map-Reduce
- MPI (Message Passing Interface)
- OpenMP/OpenACC
- CUDA
- ANTLR
- C/C++/Java
- Socket Programming
- SMS/GPRS communication through programming
- Serial Communication through programming
- Device Driver Programming
- Microsoft Visio
- Visual Basic
- MS Power Point Macro (Visual Basic Editor)
- Visual C++
- OmniORB CORBA
- S3C2410 Flash Programming
- Linux Programming (scripting)
- Linux Administration
- ARM Linux Toolchains
- QT Embedded
- VB.NET Programming
- C#.NET Programming
- ASP.NET
- Oracle Database Administration
- Oracle Developer
- SQL Server, SSIS
- Technical Documentation
- Research Publications

Interests

- Intelligence related activities (quiz, games)
- Reading Books on technology, time management, leadership and religious.

References

Dr. Mayez Al-Mouhamed
Professor, Computer Engineering Department
King Fahd University of Petroleum and Minerals
mayez@kfupm.edu.sa, +966560719612

Dr. Adel F. Ahmed
Chairman, Information and Computer Science Department
King Fahd University of Petroleum and Minerals
adelahmed@kfupm.edu.sa, +966505497392

Dr. Sadiq Sait
Director, Centre of Communications and IT
King Fahd University of Petroleum and Minerals
sadiq@kfupm.edu.sa , +966503826267

Work Experience

Software Engineer – Database Architecture/Application Development
TRG (The Resource Group) – Pakistan Jul 2007 – Jul 2009

TRG is the leading provider of equity capital, strategic advice, customized outsourcing solutions, and proprietary technology in the BPO sector. I have worked here for CRM/ERP related solutions for the following clients:

- Credit one Bank of United States
- Quadrem, Global Supply Chain Solutions
- American Honda Motor Company
- Nautilus Incorporation
- Bentley Motors
- AT&T
- BMW
- VolksWagen

Major Tasks:

- Implementing DTS Processes using SQL Server Integration Services
- Performing Technical Audits, Team Training
- Design and Development of the Scripts for Call Agents and the related reporting
- Script Implementation
- Unit Testing and Collaboration with QA
- Personnel
- Reporting using VB.NET/C# and Reporting Services 2005
- Stored Procedure creation and management for reports
- Direct Coordination with Campaign Account Manager

Worked Technologies/Tools:

- VB.NET
- C# (Windows and Web Applications)
- SQL Server Reporting Services
- SQL Server Integration Services
- SQL Server Import/Export
- SQL Server Procedures and Functions
- Excel VBA

Software Engineer – Application Development
Wavetec Private Limited – Pakistan Jan 2005 - Jul 2006

Wavetec is a leading organization renowned for providing customized technology solutions to numerous high profile clients globally. I have worked here for Electronic Queuing Systems, Information Display System and Point-Of-Sales Solutions for the following clients:

- Dubai Financial Market
- Dubai Municipality
- Emirates
- Comsets Services
- Doha Securities Market
- Tensator, UK

Major Tasks:

- Design and Development (Programming)
- Technical Documentation
- Testing and Debugging
- Technical Support
- Collaboration with QA personnel

Worked Technologies/Tools:

- communication through SMS/GSM/GPRS/Land-line modem/LAN
- Linux C++ Programming
- Visual C++
- Visual Basic/VB.NET
- omniORB CORBA
- SQL Server
- Microsoft Visio
- ARM Linux Toolchains
- WLAN Configuration
- QT/Embedded
- Kernel Compilation to include custom drivers
- S3C2410 Flash Programming (installing bootloader, kernel, filesystem)
- Writing custom printer drivers.