Dr. Vali Uddin
Parsa View Apt # Y-506
Frere Town, Clifton, Karachi, Pakistan
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(021) 34988777, 03003509035

OUTSTANDING ACHIEVEMENTS:

- First Class First Position in BE (Electronics) from NED University, Karachi.
- Conference Chairman First and Second IEEE International Conference on Computer Control and Communication at PNEC-NUST, Karachi on 12-13 November 2007 and 17-18 February, 2009 respectively and Conference General Chair of 21st IEEE International Multi topic Conference, Hamdard University Karachi held on November 01 – 02, 2018.
- Initiated the BE (Electronics), BE (Telecommunication), MS (Computer Science), MS (Engineering), PhD (Computer Science) and PhD (Engineering) programs at Iqra University, Karachi as a Dean, Faculty of Engineering, Sciences and Technology.
- Initiated the BE (Electrical) and BE (Mechanical) programs at Hamdard University as a Dean, Faculty of Engineering, Sciences and Technology.
- Key member of a team as Registrar who brought Financial turnaround of Hamdard University in less than two years
- Key member of a team member who developed and expanded MS and PhD programs at PNEC-NUST

KEY QUALITIES:

- Experience of Strategic Planning and Implementation, Academic, Financial and Human Resource Planning of Large University.
- Working experience and knowledge of all tiers of University level positions (Academic and Administrative)
- Eighteen years' experience of Heading Faculty and Departments.
- Eighteen years of Post-PhD. Research and Teaching experience.
- Supervising research at Graduate and Doctorate level.
- Experience of curriculum development of Bachelor, Masters and Doctorate level in Engineering and Information Technology.
- Experience of policy and procedure development related to academics and academic administration.
- Experience of development and implementation of Campus Management System.
- Well versed with the requirement of HEC and different councils (PEC, PMDC, PBC, PCP, NCEAC, NACTE etc.)
- Well versed with higher education system of Pakistan and USA.
- Working experience in large industries of Pakistan.

EDUCATION:

Northeastern University, Boston, MA
Ph.D. Electrical Engineering (2000)
Major in Control Systems Design and Signal Processing; minors in Mathematics and Computer Engineering.
Research Topic: Design of Minimal Order Controller which preserves the Robustness (or achieves, Loop Transfer Recovery) of State Feedback Control. Emphasis on the Functional Observer Design, Model Reduction technique using LMI based approach, Positive Real and Fragile Controllers.
Thesis Title: Reduced Order LTR Controller

Boston University, Boston, MA
Master of Science, Electrical Engineering, (1992). GPA 3.58/4.00
Concentration in Control System and Microprocessor Design

N.E.D. University of Engineering and Technology, Karachi, Pakistan
Bachelor of Engineering, Electronics Engineering, (1988). GPA 3.94/4.00
Concentration in Electronic Engineering.

EMPLOYMENT:

Sir Syed University of Engineering & Technology, Karachi, Pakistan
Vice Chancellor *(10 July 2019 to date)*

Hamdard University, Karachi, Pakistan
Professor, *(July 2011 – May 2019)****, Acting Vice Chancellor*** *(from October 24 till October 31, 2013, and July 22, 2014 till August 29, 2014)****, Dean****, Faculty of Engineering Sciences and Technology (July 2013 – May 2019),* ***Registrar*** *(April 2017 till October 2018),* ***Acting Registrar****, Hamdard University (August 2012 till August 2015) and,* ***Director****, Hamdard Institute of Information Technology, (July 2011 - July 2013)*

Responsibilities as Dean:

- Coordinating the development of and implementing the Faculty Vision and Goals Statement
- Leading Faculty efforts toward achieving University goal
- Leading, and coordinating Faculty strategic planning and curriculum development
- Supervising, evaluating, and supporting Departments in a manner that promotes excellence in instruction, scholarly and creative productivity. and service
- Evaluating overall Faculty productivity in instruction, research, and service responsibilities
- Advising the University Vice Chancellor on University policies and procedures

- Providing recommendations to the Vice Chancellor on policies and procedures, especially in the academic area
- Developing, leading, and encouraging fundraising in support of the Faculty goals and the goals of its departments and programs, as well as outreach and public service efforts.

Responsibilities as Registrar:

- To develop and maintain an organizational structure that reflects the university's culture and supports its mission
- To make the case for adequate levels of budget support
- To effectively manage and control the resources allocated to the office
- To provide effective administrative support systems
- To provide effective overall direction and leadership to staff, including enlightened change management; ensuring fair performance evaluation; and providing job-related training and encouragement of staff participation in personal and professional development on an on-going basis.
- To conduct ceremonial functions such as Convocation

Responsibilities as Director:

- To plan, organize and supervise the work of the Institute
- To exercise supervisory control over the academic and non-academic staff
- To prepare annual budget of the institute
- To prepare the annual academic programs
- To propose annual Increments
- To incur expenditure provided for in approved budget
- Empowered to take appropriate disciplinary action against the students, staff members and other employees of Institute
- To grant all kind of leave to staff of institute
- To determine the cases of promotions

Pakistan Navy Engineering College, National University of Sciences and Technology, Karachi, Pakistan

Head, Department of Electrical Engineering (2007 – 2011)

- Assist with the development and implementation of the academic strategic plan within the department.
- Participate in formulation of overall policies for the proper functioning of the university.
- Establish a competent and qualified base of faculty both visiting and permanent.
- Recruit, interview and recommend employment of faculty in consultation with the dean in the department.
- Ensure that the credentials of faculty comply with college policy and accrediting guidelines and that required documentation is complete.
- Actively participate in assisting the university to maintain criteria required for accreditation.

- Recommend and coordinate staff development activities for faculty and support staff within the department.
- Coordinate special department activities.
- Originate, implement and coordinate appropriate labs and lab components.
- Represent the university/department within the community at various functions.
- Plan and conduct departmental board of studies meetings twice a year or more if needed.
- Advise and guide the Dean for the smooth running of Faculty
- Act as a faculty member and researcher
- Supervise MS and PhD level student research
-

Iqra University, Karachi, Pakistan
Dean*, Faculty of Engineering Sciences and Technology (May 2004 till December 2006),* ***Head****, Department of Computer Science, (September 2001 – May 2004)*

- Act as a faculty member and researcher
- Supervise undergraduate and graduate level students' projects and research
- Formulate and improve the curriculum and programs of the department
- Recruit and maintain the faculty
- Identify the training and development needs of the staff and faculty in the department of computer science and department of engineering
- Formulate and implement departmental policies concerning students
- Formulate and implement departmental budgets
- Programming of subordinate's work and assessing performances
- Ensure proper scheduling of classes
- Organize meetings and disseminate organizational issues and departmental plans to subordinates and students
- Coordination with other departments
- Ensure that staff turnover and indispensability is minimized
- Participate and organize advertising/P. R programs and events
- Ensure the proper working of all computer and other lab equipment's
- Up gradation and maintenance of lab and office equipment's

Pakistan Navy Engineering College, National University of Sciences and Technology, Karachi, Pakistan
Assistant Professor *(2000 - 2001)*

- Teach undergraduate and graduate level engineering courses and labs
- Supervise final year projects of undergraduate students
- Supervise thesis and projects of graduate students

Northeastern University, Boston, MA
Teaching Assistant *(1995-1999)*

- Developed several Signal Processing Algorithms for Digital Filter Design using C. Used the Matlab Application Program Interface to call the C program in Matlab Environment.

- Used Matlab Graphical and Animation Capabilities, to create Interactive Graphical User Interface (GUI) for a Pendulum Simulation program.
- Instructed Control Systems Class and Lab courses.
- Hold recitations session for various Electronics and Control courses.
- Help students with Matlab and PSPICE simulation software, assigned and grade their weekly assignments and term projects.

Boston University, Boston, MA
Teaching Assistant *(1991-1992)*

- Managed the Microprocessor Lab, assisted students with experiments and evaluated them.
- Graded the weekly student assignments for various undergraduate and graduate level courses.

Pakistan Steel Mills, (Karachi, Pakistan)
Assistant Executive Engineer *(1989-1990)*

- Designed and built Microprocessor based flat bed and conveyor belt weighing machines. Worked with the team of Engineers of different departments to identify and replace old and obsolete process control instrumentation, with modern instrumentation using indigenous resources.

Fauji Fertilizer Industries, (Sadiqabad, Pakistan)
Maintenance Engineer *(1988-1989)*

- Managed and assigned work to subordinates for on-line maintenance of the plant, and scheduled preventive maintenance of instrumentation for smooth operation of the plant.

PUBLICATIONS:

2018

- *Using Context from inside - out vision for improved activity recognition*, IET Computer Vision Journal, Volume 12, Number 3, March 2018
- *Probabilistic hierarchical model using first vision for scenario recognition*, Wireless personal communication, Sept 10, 2018.
- *First person vision for activity prediction using probabilistic modeling,* Mehran University Research Journal of Engineering and Technology. Volume 37, Number 04, Oct. 2018
- *Automatic Image Annotation for Small and Adhoc Intelligent Applications using Rasberry Pi,* Engineering Application of Artificial Intelligence Conference, (EAAIC 2018), Dec 3 – 5, Kota Kinabalu, Saba, Malaysia

2017

- *First Person Vision for Activity Prediction Using Probabilistic Modeling, Mehran University Research Journal of Engineering and Technology.*
- *An Electrical Perspective of the Baroreflex Feedback Mechanism for Heart Rate Control,* International Journal of Bio-Science and Bio-Technology (IJBSBT), volume 9, Number 01, February 2017

- *An Electrical Perspective of the Baroreflex Feedback Mechanism for Heart Rate Control*, International Conference on Recent Trends in Computer Science and Electronics Engineering (RTCSE 2017), January 02 – 03, Kuala Lumpur, Malaysia

2016

- *Using ANN for Multi-View Activity Recognition in Indoor Environment,* 14th International Conference on Frontiers of Information Technology (FIT 2016), December 19 – 21, Islamabad
- *Application of Complex Hadamard Transform*, 14th International Conference on Frontiers of Information Technology (FIT 2016), December 19 – 21, Islamabad
- *Bond Graph model for the Right Atrium of Heart*, IEEE – EMBS Conference on Biomedical Engineering and Science, December 4-8, Kuala Lumpur, Malaysia
- *Map Reduce for High-Speed Feature Identification for Computer Vision application,* International Conference on Innovative Computing (ICIC 2016), Sept 23 - 24, Lahore, Pakistan
- *Map Reduce for Multi-View Object Recognition*, International Conference on High Performance Computing & Simulation (HPCS 2016), July 18 - 22, Innsbruck, Austria
- *Satellite-based land use mapping: A comparative analysis of Landsat-8, Advanced Land Imager, and Big Data Hyperion imagery,* Journal of Applied Remote Sensing (JARS), Volume 10, Number 2, April 2016
- *Non-holonomic Mobile Robot Trajectory Tracking using Hybrid Controller*, Mehran University Research Journal of Engineering and Technology. Volume 35, Number 2, April 2016
- *A Unified Bond Graph Modeling Approach for the Ejection Phase of the Cardiovascular System,* Mehran University Research Journal of Engineering and Technology, volume 35, issue 3, July 2016. Page# 413-425
- *PACEMAKER: An Insight into the Artificial Heart Rhythm,* 20th World Multi conference on Systemics, Cybernetics and Informatics (WMSCI 2016), July 5-8, Orlando, USA

2015:

- *Hyperspectral Hyperion Imagery Analysis and Its application using Spectral Analysis*, Joint Conference of Photogrammetric Image Analysis and High Resolution Earth Imaging for Geospatial Information, Munich, Germany.
- *Sliding mode control for electromagnetic levitation system based on feedback linearization,* Pattern Recognition Association of South Africa and Robotics and Mechatronics International Conference (PRASA-RobMech), Port Elizabeth, South Africa

2014:

- *A Noisy Channel Tolerant Image encryption scheme*, Wireless Personal Communication
- *Development of efficient brain computer interface* (*BCI) system for stroke rehabilitation,* IEEE 17th International Multi topic Conference (INMIC).

2013:

- *MIMO Predictive PID Control: A Practical Approach for Quadruple Tank*, Journal of Circuits, Systems, and Computers, March 2013.

2011:

- *Predictive PID Control for Industrial Applications*, Dynamics of Continuous, Discrete and Impulsive Systems - Series B: Applications and Algorithms, Vol. 18, No. 3, 279-301.
- *Design and Implementation of a Fuzzy Controller to Improve Non Linearity in the Operation of an Airplane with an Autopilot in a Longitudinal Mode,* 8th International Conference on Fuzzy Systems and Knowledge Discovery, China.
- *Modeling and Neural Control of Quadrotor Helicopter*, Yanbu Journal of Engineering and Sciences

2010:

- *Design and Simulation of Model Based System Using Real Time Windows*, Special Issue of Ubiquitous Computing Security System, UBICC.
- *Analysis and Simulation of Propagation Model for Wireless Communication of Bio Sensors,* 6th International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM), Chengdu, China.
- *A Perceptually Scalable and JPEG Compression Tolerant Image Encryption Scheme,*2010 Fourth Pacific-Rim Symposium on Image and Video Technology (PSIVT), Singapore.
- *Multivariable Predictive PID Control Design for Quadruple Tank,* World Academy of Science, Engineering and Technology.
- *A secure and robust hash-based scheme for image authentication,* Signal Processing.

2009:

- *System Response Analysis and Model Order Reduction, Using Conventional Method, Bond Graph Technique and Genetic Programming,* accepted for publication in International Journal of Systemics, Cybernatics and Informatics JSCI USA
- *Multiple Layer Perceptron for Direct Inverse Control of Nonlinear System,* 2nd IEEE International Conference on Computer, Control and Communication, Feb 2009, Karachi, Pakistan
- *A Robust Image Encryption Scheme using State Feedback Control,* 2nd IEEE International Conference on Computer, Control and Communication, Feb 2009, Karachi, Pakistan

2008:

- *Modeling of Quadrotor Helicopter Dynamics,* International Conference on Smart Manufacturing Application (ICSMA08) Gyeonggido, Korea.
- *Modeling and Simulation of Network & Systems Service Management in Healthcare.* The 2nd IASTED Africa Conference, September 2008, Gaborone, Botswana

- *Simulation of Model Based System Design Using Real Time Windows*, 12th Multi-topic conference on Systemics, Cybernetics and Informatics, July 2008, Orlando, Florida, USA.
- *System Response Analysis and Model Order Reduction, Using Conventional Method, Bond Graph Technique and Genetic Programming,* 12th Multi-topic conference on Systemics, Cybernetics and Informatics, July 2008, Orlando, Florida, USA.
- *Mixed* $l_1 / H_2 / H_\infty / TDC$ *Controller Synthesis for Space Launcher during atmospherics flight.,* Mehran University Research Journal of Engineering & Technology, April 2008.
- *Statistical Analysis of College Wardroom*, 2nd Mathematics Colloquium, IoBM, March 2008.
- *Utility od Bond Graph in Constructing a Genetic Tree for a Multi Domain System,* Technocrat, Journal of Sciences & Technology.
- *Optimal Path Planning of Mobile Robots,* Technocrat, Journal of Sciences & Technology.
- *Implementation of Genetic Algorithm for Parameter Estimation of LTI systems,* Technocrat, Journal of Sciences & Technology.
- *A Comparative study of Generalized Predictive Control with PID Control,* Technocrat, Journal of Sciences & Technology.

2007:

- *A Unified Modeling Approach using Bond Graph Method and its Application for Model Order Reduction and Simulation*, UBICC Ubiquitous Computing and Communication Journal, October 2007.
- *Application of Genetic Programming and Bond Graph Method for Electrical Systems*, Proceedings of 11th World Multi-Conference on Systems, Cybernetics and Informatics, Florida, USA.
- *Model Order Reduction Approach using Tree Structured Transfer Function and Bond Graph Method and its Comparison with Balanced Realization, Schmit Technique and Hankel Norm Model Reduction*, Proceedings of 5th International Bhurban Conference on Applied Sciences and Technology 2007, Islamabad, Pakistan.
- *Utility of Bond Graph in Constructing a Genetic tree for a Multi domain System*, Proceeding First International Conference on Computer, Control & Communication, PNEC, Karachi, November 2007.
- *A Comparative Study of Generalized Predictive Control with PID Control*, Proceedings of First International Conference on Computer, Control & Communication, PNEC, Karachi, November 2007.
- *Implementation of Genetic Algorithm for Parameter Estimation of LTI Systems*, Proceedings of First International Conference on Computer, Control & Communication, PNEC, Karachi, November 2007.

2006:

- *Modeling, Model Order Reduction and Simulation of High Pass Filter Using Bond Graph Method,* Technocrat, Journal of Sciences & Technology.

2005:

- *Robust performance Control of Smart Structural System with Limited Input***,** Proceedings of International Conference on Modeling, Simulation and Applied Optimization (ICMSAO'05) Sharjah, UAE.
- *Application of tree structured transfer function to an electromechanical system, its comparison with conventional methods and application for order reduction,* IEEE Conference on Computational Intelligence for Modeling, Control and Automation, Vienna, Australia
- *Robust optimal active vibration control of smart structures using convex optimization,* Proceedings of the International Bhurban Conference of Applied Sciences and Technology, Bhurban, Pakistan.

2004

- *Synthesis of Robust Performance of Active Suspension Control of Vehicle with Parametric uncertainty,* Proceedings of the 3rdInternational Bhurban Conference of Applied Sciences and Technology, Bhurban, Pakistan.
- *Analysis of Robust Performance of Active Suspension Control of Vehicle with Parametric uncertainty*, Proceedings of the 10th IEEE International Conference on Methods and Models in Automation and Robotics, Miedzyzdroje, Poland.
- *Modeling, Model order reduction and Simulation of High Pass filter using Bond Graph Method*, National Conference for Emerging Technology (NCET), Karachi, Pakistan.
- *A unified modeling approach using bond graph method and its application for model order reduction and simulation*, Proceedings of 8th International Multi topic Conference INMIC, Lahore, Pakistan.

2003

- *Trade-off between the H_2 and H_α in multi-objective state feedback synthesis through LMI Characterization*, Proceedings of the IEEE 7th International Multi topic Conference INMIC, Islamabad, Pakistan.

2001:

- *Multimedia - An Introduction,* Technocrat, Journal of Sciences & Technology.

1999

- *A Structurally Constrained LMI Approach to Maximizing the Real Stability Radius by State Feedback,* Proceedings of the 1999 American Control Conference, CA, USA.
- *A simple method for the design of Minimal Order Multi-Functional Observer,* Proceedings of 2nd IASTED International Conference on Control and Applications, Banff, Alberta, Canada.

1998

- *A Structurally based Approach to Model Reduction using Bond Graphs*, Proceedings of the 1998 American Control Conference, Philadelphia, PA, USA.

1996

- *An LMI approach to the fixed order LTR controller,* Proceedings of the 35thIEEE Conference on Decision and Control, Kobe, Japan.

1995

- *Transmission Zero Matrix and Reduced Order LTR Controller,* Proceeding of the 1995 American Control Conference, Seattle, WA, USA.

GRANTS AND SCHOLARSHIPS:

- **Scholarship**: Ministry of Science and Technology, Pakistan, 1991-1994.
- **Grant (Co-Investigator):** Off-the-Grid Application of Doubly-Fed Induction Generators in Autonomous Wind Power Systems for Voltage and Frequency Stability – Higher Education Commission, Pakistan.

- **Grant (Principal Investigator):** A Novel Approach to Mitigate the Performance Degradation in Big Data – Jointly funded by Hamdard University and University of Technology Petronas, Malaysia.

SUPERVISION MS/PhD. RESEARCH WORK:

PhD Thesis Supervised:

1) Dr. Shaheena Noor – Context Aware Perception for Activity Understanding (2019)
2) Dr. Lubna Chugtai – Synthesis of State Space Model for Human Cardio Vascular System Using Bond Graph Approach (2017)
3) Dr. Qamar Saeed – Adaptive PID Control for Complex Industrial Application (2011)
4) Dr. Jawed Akhtar Bhutto – l_1/H_2/H-infinity/TDC multi-objective optimization control synthesis for MIMO systems (2009)

MS Thesis Supervised:

1) Muhammad Safwan – Control of Non-Holonomic Robots (2015)
2) Ahmed Bilal – Mixed H2/H_∞ design for Aircraft Control (2012)
3) Mohammad Rafay – Active Noise Cancellation (2012)
4) Mohammad Kashan – Robust Control Design for Power Supply for telecom system
5) Zohaib Khanzada – Sliding Mode Control for Aerodynamic System (2011)
6) Mohd Amir Akram – Sliding Mode Control Design for Maglav System (2011)
7) Zohaib Khalid – Robust Control Design for Aerodynamic System (2010)
8) Lt. Cdr Haseeb – Design of Fuzzy Logic Controller for Underwater Vehicle (2010)
9) Ms. Nabeela – MIMO space-time coded wireless system (2010)
10) Lt. Cdr Saqlain – Design, analysis and implementation of predictive adaptive controller for autonomous surface vessel (2009)
11) Major Salim Taqi – Active noise cancellation using adaptive algorithms (2008)
12) Muhammad Yasir Amir Khan Niazi – Algorithm Development for In Flight Control of Quad Rotor UAV (2007)

13) Mr. Faisal Soomro – Adaptive echo canceller for telephone networks Cancellation (2007)
14) Lt. Cdr M Ayub – Design, analysis and implementation of adaptive controller for autonomous surface vessel (2006)
15) Lt. Cdr Sajjad Haider Zaidi – Marine vessel position estimation (2006)
16) Lt. Cdr Omer Ali Beg – Recursive estimation methods for identification of LTI systems (2006)
17) Mr. M Yasir Khan – Local path planning autonomous mobile robots (2006)
18) Mrs. Lubna Moin – A unified modeling approach using bond graph method and its application for model order reduction and simulation (2005)
19) Mrs. Shabana Shaheen – Attitude control system of flight vehicle (2004)
20) Mr. Mehdi – Adaptive filtering techniques for Echo Cancellation (2002)

HONORS AND ACHIEVEMENTS:

- First Class First Position in Electronics Engineering, N.E.D. University, 1988.
- Recommended for Presidential Award of Academic Distinction for Izaz-e-Kamal and Izaz-e-Fazeelat by PNEC Karachi for the year 2000.
- Recommended for IT Educationist by Iqra University for NCR IT Awards for the year 2001.
- Recommended for HEC-Best Teacher Award by PNEC Karachi for the year 2007.
- Honourable mention in SAP's prestigious profile book titled "Who's Who in Pakistan 2007 – Galaxies of New Millennium".
- Member, Executive Committee, Institute of Electrical and Electronics Engineer (IEEE).
- Member, Review Panel, International IEEE - Industrial Electronic Society.
- Member, Program Committee, World Multi-Conference on Systemics, Cybernetics and Informatics (2008 – 2009), Florida, USA.
- Co-author, Best Session Paper, the 12th World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI 2008), held in Orlando, Florida, USA.
- Co-author, Best Paper, 2nd IEEE International Conference on Computer, Control and Communication (IEEE-IC4, 2009), held in Karachi, Pakistan
- Scholarship: Asian Institute of Technology, Thailand for MS programme, 1989.
- Scholarship: Ministry of Science and Technology, Pakistan, 1991-1994.
- HEC Grant (Co-Investigator): Off the grid Application of Doubly-Fed Induction Generators in Autonomous Wind Power Systems for Voltage and Frequency Stability 2007.
- Teaching Assistantship: Northeastern University, 1995-1999.
- Member, Board of Studies, CIS Department, NED University.
- Member, Selection Board, CIS and Electronics Department, NED University.
- Member, Board of Studies, Sindh Madrastul Islam University.
- Member, Selection Board, Sindh Madrastul Islam University.
- Member, Academic Council, Sir Syed University.
- Member, Selection Board, Sir Syed University.

- Member, Advisory Board, Bohra Education Committee, Clifton, Karachi.
- Member, Graduate Research Committee, Hamdard University, Karachi.
- Member, Editorial Board, BIZTEK Research Journal, BIZTEK, Karachi.
- Member, Academic Council, MSB School, Karachi.
- Member, Review Panel, Mehran Research Journal, Mehran University of Engineering and Technology, Jamshoro.
- Member, Advisory Board, IEEE-International Multi-Topic Conference 2008.
- Subject Expert, PEC accreditation team for Electronics and Electrical Engineering.

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03 February 2020