Ahmad Zahid Rao

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To perform and promote quality biomedical teaching and research in Pakistan.	
PhD in Biomedical Engineering NED University of Engineering & Technology, Karachi, Pakistan	2022
Postgraduate Diploma in Supply Chain Management Pakistan Institute of Management, Karachi, Pakistan	2016
MS in Biomedical Engineering <i>New Jersey Institute of Technology</i> , <i>New Jersey</i> , <i>USA</i>	2015
BE in Biomedical Engineering NED University of Engineering & Technology, Karachi, Pakistan	2013
Lecturer, Department of Biomedical Engineering, NED University of Engineering & Technology (Karachi, Pakistan) Teaching various Biomedical Engineering courses Undergraduate level: Biomechanics Bioinstrumentation and Measurements Computer Aided Engineering Graphics Engineering Mechanics for Biomedical Engineers Postgraduate level: Finite Element Method	June 2020 - Present
 Lecturer, Biomedical Engineering, Barrett Hodgson University (Karachi, Pakistan) Held position as Interim Chairperson (for 2 months) Played key role in setting up department from the scratch. Some notable work include: Planning 5-year budget for laboratory equipment. Follow-ups and progress meetings with the procurement department for lab equipment. Initiation of work, follow-ups and regular site visits with the vendors for lab layouts, furniture manufacturing progress and labs' readiness status. Identification of the relevant books for library with up-to-date editions and dealing with the librarian on procurement related matters. Primary curriculum development for BE Biomedical Engineering program, following HEC's guidelines, and subsequent conduct of 1st Board of Studies meeting. Teaching assignments: PHC-101 Applied Physics (Fall'17) ELE-101 Basic Electrical Engineering (Spring'18) ELE-201 Circuit Analysis (Fall'17) ELE-201 Computer Aided Engineering Drawing (Fall'18) BME-204 Bioinstrumentation – I (Spring'19) ELE-301 Microprocessor and Interfacing (Fall'19) MTH-111 Multivariate Calculus (Fall'19) [for BS Computer Science students] Administrative assignments: Member, DBME Board of Studies. Member, DBME Industrial Advisory Board. Member, DBME Field Visits / Internship Committee. Member, DBME Field Visits / Internship Committee. Member, DBME Field Visits / Internship Committee. Member, DBME Labs Coordination Committee. Member, DBME Labs Coordination Committee. Mem	Oct 2016 – May 2020
	 PhD in Biomedical Engineering & Technology, Karachi, Pakistan Postgraduate Diploma in Supply Chain Management Pakistan Institute of Management, Karachi, Pakistan MS in Biomedical Engineering New Jersey Institute of Technology, New Jersey, USA BE in Biomedical Engineering NED University of Engineering & Technology, Karachi, Pakistan <u>Lecturer</u>, Department of Biomedical Engineering, NED University of Engineering & Technology (Karachi, Pakistan) Teaching various Biomedical Engineering courses Undergraduate level: Biomechanics Bioinstrumentation and Measurements Computer Aided Engineering Graphics Engineering Mechanics for Biomedical Engineers Postgraduate level: Finite Element Method Lecturer, Biomedical Engineering, Carachi, Some notable work include: Planyed key role in setting up department from the scratch. Some notable work include: Planyed key role in setting up opartment from the scratch. Some notable work include: Planyed key role in setting up opartment from the scratch. Some notable work include: Planing 5-year budget for laboratory equipment. Follow-ups and progress meetings with the procurement department for lab equipment. Initiation of work, follow-ups and regular site visits with the vendors for lab layouts, furniture manufacturing progress and labs' readiness status. Identification of the relevant books for library with up-to-date editions and dealing with the librarian on procurement related matters. Primary curriculum development for BE Biomedical Engineering program, following HEC's guidelines, and subsequent conduct of 1st Board of Studies meeting. Teaching assignments: PHC-101 Applied Physics (Fall'17) ELE-101 Basic Electrical Engineering Drawing (Fall'18) BME-204 Bionstrumentation - 1(Spring'19) ELE-301 Microprocessor and Interfacing

	Teaching / Educational Assistant, <i>Center for Pre-College Programs, NJIT (NJ, USA)</i> Worked as Teaching Assistant for the Robotics Program. Worked on updating the Medical Robotics professional development course called 'Virtual Medibotics', designed for high-school and middle-school teachers.	Jan-Aug 2015
Research Publication	2021 <u>Rao, A.Z.</u> ; Hasan, M.A. Evaluation of a Chair-Mounted Passive Trunk Orthosis: A Pilot Study on Able-Bodied Subjects. Sensors 2021, 21, 8366. https://doi.org/10.3390/s21248366 2019 Muhammad Nabeel, Muhammad Sumaid Mukhtar, <u>Ahmad Zahid Rao</u> , Syed Muhammad Haider Raza, Ali Baig, Muhammad Abul Hasan. A Quality monitor for Cardio-Pulmonary Resuscitation (CPR). In 34th All Pakistan IEEEP Students Seminar, 12th January 2019, Karachi, Pakistan.	
	2018 Tahira Tayyaba, Jouhar Rizwan, Ghani Huwaina Abd, Ahmed Naseer, <u>Rao Ahmad Zahid</u> , Jamil Sara, The Effect of Mineral Trioxide Aggregate as a Direct Pulp Capping Agent in Permanent Teeth. Journal of International Oral Health 2018, 10, 6, 310-313.	
	2016	
	<u>Ahmad Zahid Rao</u> . (MS Thesis) Realization of Dynamixel Servo Plant Parameters to Improve Admittance Control for a Compliant Human-Robot Interaction. MS Thesis, New Jersey Institute of Technology, NJ, USA. 2016 (accessible at http://archives.njit.edu/vhlib/etd/2010s/2016/njit-etd2016-020/njit-etd2016-020.php)	
	http://archives.njn.edu/vhilo/etu/2010s/2010/ljn-etu2010-020/ljn-etu2010-020.php/	
Academic Software Proficiency	3D Printing (Makerbot, FlashForge), Finite Element Analysis (ANSYS), Graphical/Programming (MATLAB, Simulink, LabVIEW, Visual C#, C language, Unity3D), Circuit Designing and Simulation (Proteus ISIS and ARES), Computer Aided Drawings (SolidWorks, Creo, Pro/Engineer, Fusion360), Microcontrollers (Arduino, PIC, 8051), Gait Lab Data Analysis, 3D motion capture and Electromagnetic position sensors.	
Industry Experience	 <u>Biomedical Engineer</u>, <i>The Indus Hospital (Karachi, Pakistan)</i> Looking after the <i>Rehabilitation Department</i> for proper training, operating and maintenance of the rehabilitation diagnostic and therapeutic equipment. Trained by manufacturer on: Audiometry equipment by MAICO Diagnostics GmbH, Germany Functional Electrical Stimulation (FES) machine by Restorative Therapies Inc., USA. Also managed the monthly <u>Planned Preventive Maintenance (PPM)</u> for the entire hospital's medical equipment in coordination with department engineers, and the monthly <u>Progress</u> <u>Report</u> from the Biomedical Department of all campuses of the Indus Hospital network. 	Mar-Oct 2016
	Biomedical Engineer, <i>Medinostic Healthcare, Pvt Ltd (Karachi, Pakistan)</i> Worked with the Critical Care division in providing live demonstrations, trainings, testing, installations and troubleshooting of the Patient Monitors and Anesthesia Machines. Played key role in developing the monthly e-newsletter for the same division with a marketing and biomedical engineering point of view in consultation with the specialists.	Jan-May 2014
	Biomedical Engineer, Noor International, Pvt Ltd (Karachi, Pakistan) Assisted with diagnosis, troubleshooting and testing of various Critical Care medical equipment including Ventilators, Anesthesia Machines, Patient Monitors, Syringe and Infusion Pumps, Diathermy units, OT lights and tables.	Jul-Nov 2013
Volunteer Experience	MATLAB Tutor, Graduate Biomedical Engineering Society, NJIT (<i>NJ</i> , USA) President, Graduate Biomedical Engineering Society, NJIT (<i>NJ</i> , USA) Assisted the Duchenne Muscular Dystrophy patients for research studies, NJIT (<i>NJ</i> , USA) Event Supervisor, New Jersey Science Olympiad (<i>NJ</i> , USA) Volunteer, Pakistan Society of Anesthesiologists (<i>Karachi, Pakistan</i>)	

Volunteer, Pakistan Society of Anesthesiologists (Karachi, Pakistan)