



Name: Dr. Kais Al-Abdullah

Rank: Assistant Professor - Electrical and Electronics Engineering

Personal Information

Nationality:	Australian
AU Joining Date:	16 Apr 2023
E-Mail Address:	k.alabdullah@au.edu.kw

Professional Information

Education:	<p>PhD (2020), Deakin University, Institute for Intelligent Systems Research and Innovation (IISRI), Vic/Australia. Dissertation: "Modelling and Optimization of Robotic Bone Drilling and Milling Processes".</p> <p>MSc (1999), University of Technology, Control and Systems Engineering Department. Baghdad/ Iraq. Thesis: "A Neural Controller Using Internal Model Control Strategy"</p> <p>BSc (1996), University of Technology, Control and Systems Engineering Department. Baghdad/Iraq.</p>
Specialization:	Control and Systems - Emphasis on mechatronics systems and machine learning based control for medical applications
Current Academic Position:	Assistant Professor
Current Professional Positions:	NA
Previous Administrative Position Held:	NA
Previous Academic Positions Held:	Lecturer at Control and Systems Engineering Department, University of Technology, Baghdad/ Iraq.
Fellowships And Honors:	Member of Iraqi Engineers Union (IEU)

<p>Teaching Experience:</p>	<p>(2021-2022) University of Technology, Baghdad / Iraq. Lecturer and Lab instructor, Department of Control and Systems Eng.</p> <p>(2019) Deakin University, Victoria / Australia Teaching Assistant - School of Engineering</p> <ul style="list-style-type: none"> • Embedded System Design Project: interfacing different devices to microcontrollers, 3D printing, laser cutting, print circuit board (PCB) design. • Lab and Online lecturing <p>(2010 – 2013) & (2003 – 2006) University of Technology, Baghdad / Iraq. Lecturer and Lab instructor, Department of Control and Systems Eng.</p> <ul style="list-style-type: none"> • Teaching Control Systems and Instrumentations: covering mathematical modelling of control systems, control systems analysis and design (in time and frequency domains), with an introduction to nonlinear control systems. • Teaching Calculus for first year student • Developing quizzes, exams, homework, and coordinating grading • Coordinating labs: Control Systems Lab, Electronics Lab, Digital Principles Lab, Computer Control Lab, Process Control and Instrumentations Lab. • Supervising undergraduate research students (final year projects) in the following fields: Mechatronics System, Process Control and Instrumentations, machine learning, Image Processing, and Robotics <p>(2006 – 2010) Emirates Aviation University, UAE / Dubai. Lecturer and Lab instructor. Teaching experience in Foundation, Diploma, Higher Diploma, and Undergraduate programs (collaboration programs of Emirates Aviation University with Coventry University, UK):</p> <ul style="list-style-type: none"> • Teaching Control Systems and Instrumentations (for bachelor's degree in electrical and electronics students) covering mathematical modelling of physical systems, time response, and PID controllers. • Supervising and assessing final year projects (bachelor's degree in electrical and Electronics students) • Teaching the following subject (for a foundation, diploma, and higher diploma programs): Electrical and Electronics Fundamentals, Mathematics, Physics, Measurement Systems • Developing quizzes, exams, homework, assignments, and coordinating grading. • Coordinating and instructing Control Systems Lab (servomechanism trainers), Electrical and Electronics Lab and Physics
<p>Industrial And Technical Experience:</p>	<p>(2000 - 2003) Field Engineer in AL MAZD Group for medical, engineering systems and technologies, Baghdad / Iraq.</p> <p>Installing and maintaining medical systems: ECG and Monitoring Systems, C-Arm X-Ray Systems, Ultrasound Systems, and Operation Rooms ceiling lights systems.</p>

Research Interest:	<ul style="list-style-type: none"> • Medical Robotics • Microcontrollers Applications • Control and Measurement Systems • Machine Learning and Artificial Neural Networks • Modelling and Optimization of Dynamic Systems
Research Grants:	NA
Research and Publications including Journal and Books:	<ul style="list-style-type: none"> • Al-Abdullah, K. I., et al. (2019). "A model-based bone milling state identification method via force sensing for a robotic surgical system." The International Journal of Medical Robotics and Computer Assisted Surgery: e1989 • Al-Abdullah, K. I. A.-I., et al. (2018). "Force and temperature modelling of bone milling using artificial neural networks." Measurement 116: 25-37 • Abdul-lateef, K. I. (2012). "A low cost single-axis sun tracker system using pic microcontroller." Diyala Journal of Engineering Sciences 5(01): 65-78 • Ali, H. I., Kais I. A, and G. A. Mohammed (2006). "Multiple Model Controller Design for Electropneumatic Servo Actuator." Iraqi Journal of Computers, Communication and Control & Systems Engineering 6(1): 103-115 • Abdul Lateef, K. and K. Mirza (2000). "A Neural Controller Using IMC Strategy.", Engineering Journal of the University of Qatar, Vol. 13, 2000, pp.245-274
Paper Presentations at Professional Conferences:	<ul style="list-style-type: none"> • Al-Abdullah, K. I., et al. (2019). Optimization of the milling parameters of a robotic-based bone milling system. ICIT 2019: Proceedings of the IEEE International Conference on Industrial Technology, IEEE • Al-Abdullah, K. I., et al. (2019). An Investigation on robotic bone drilling experiments with thermal imaging. The 12th Pacific Symposium on Flow Visualization and Image Processing 19-22 November, 2019, Taiwan
College Service including committee Membership:	<ul style="list-style-type: none"> • (2012 - 2013) Member of Robotics and Automation Research Centre at Control and Systems Eng. Dep. UOT. Iraq • (2003 - 2005) Member of Examination Committees at the Control and Systems Eng. Dep., University of Technology
National Service:	NA
College Committees:	NA