

Contact Information

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Date of birth

08-06-1989

Nationality

Iraq

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Skills

Machine Vision

Machine Learning

Data Analysis

Industrial Automation

Industrial Robotics

Mobile Robotics

Python - Tensorflow

MATLAB

NI LabVIEW

Beckhoff EtherCAT

KUKA SIM Pro

Languages

English

Advanced

Kurdish

Advanced

Turkish

Advanced

Arabic

Intermediate

Diyar Khalis Bilal

Ph.D. Mechatronics Engineering

Proactive, objective oriented Mechatronics engineer with 10 years of experience in applied Mechatronics in various fields such as Machine Vision, Machine Learning and Robotics. Obtained M.Sc. and Ph.D. in Mechatronics from Newcastle University - UK and Sabanci University - Turkey, respectively. Worked for more than 3 years as a researcher at Sabanci University Integrated Manufacturing Research and Application Center (SU-IMC) in Istanbul.

Experience

Erbil, Iraq

June 2021 - Present

Lecturer

Salahaddin University

Full time lecturer at Mechanical and Mechatronics Engineering Department.

Istanbul, Turkey

September 2017 - June 2021

Researcher

Sabancı University Integrated Manufacturing Research and Application Center (SU-IMC)

Developed machine learning algorithms for realtime structural health monitoring of aircraft wings from depth images. Moreover, developed vision based learning algorithms for improving task accuracy of robotic manipulators during machining processes. As part of these works I integrated a Leica laser tracker and Basler camera with KUKA KR240 R2900 ultra robot via Beckhoff Ethercat connections for robotic machining.

Erbil, Iraq

February 2015 - August 2015

Assistant Lecturer

Sabis University

Assistant lecturer at Civil engineering department where I taught Mechanics of Materials to sophomore students.

Erbil, Iraq

September 2013 - September 2016

Assistant Lecturer

Salahaddin University

Assistant Lecturer at Mechanical engineering department where I worked and taught senior students in Mechatronics laboratory, in addition to teaching Mechanical drawing via AutoCAD to sophomore students.

Education

Istanbul, Turkey

September 2016 - June 2021

PhD in Mechatronics Engineering

Sabancı University

Dissertation: Developing Learning Algorithms for Enhancing Industrial Machine Vision Systems and Improving Task Accuracy of Robotic Manipulators

Newcastle upon tyne, UK

September 2012 - September 2013

MSc in Mechatronics Engineering

Newcastle University

Thesis: Human Recognition, Identification and Tracking using Microsoft Kinect Interfaced with DaNI Robot.

Projects

Worked as a researcher in TUBITAK 1003 project with grant number 217M078 in Turkey titled "Development of Position and Orientation Tracking System and Vibration Suppression System for Robotic Machining".

Certifications & Courses

KUKA robot programming from KUKA college in Istanbul, Turkey.

TwinCAT 3 PLC programming from Beckhoff Automation in Istanbul, Turkey.

Publications

Bilal, D. K., Unel, M., Yildiz, M., & Koc, B. (2020). Realtime Localization and Estimation of Loads on Aircraft Wings from Depth Images. *Sensors*, 20(12), 3405. (Journal)

Bilal, D. K., Unel, M. Increasing Trajectory Tracking Accuracy of Industrial Robots Using SINDYc. *IFAC-PapersOnLine*, 2021. (Journal)

Bilal, D. K., Unel, M., & Tunç, L. T. (2020). Improved vision based pose estimation for industrial robots via sparse regression, *Lecture Notes in Artificial Intelligence (LNAI)*, Springer. (Book Chapter)

Bilal, D. K., Unel, M., & Tunç, L. T. (2020). Improving vision based pose estimation using LSTM neural networks. In *IECON 2020-46th Annual Conference of the IEEE Industrial Electronics Society, Marina Bay Sands Expo and Convention Centre, Singapore, October 18-21, 2020*. (International Conference)

Bilal, D. K., Unel, M., Yildiz, M., & Koc, B. (2020). Localization and Estimation of Bending and Twisting Loads Using Neural Networks. In *IECON 2020-46th Annual Conference of the IEEE Industrial Electronics Society, Marina Bay Sands Expo and Convention Centre, Singapore, October 18-21, 2020*. (International Conference)

Courses Taught

Assistant Lecturer: System Modelling and Control

Assistant Lecturer: Mechanical Drawing with AutoCAD

Assistant Lecturer: Mechanics of Materials

Teaching Assistant: Computer Vision

Teaching Assistant: Linear Algebra