

ALA' BANI-IRSHID

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OBJECTIVE

To contribute to the domains of Computer-Aided Design, Computer-Aided Manufacturing, Industrial and Mechanical Engineering as Assistant Professor, utilizing my teaching experience, analytical, problem solving, researching, and interpersonal skills.

Professional Experience

Lecturer and Lab Supervisor

Department of Computer Engineering – Hail University

Ha'il – KSA **From:** 2011 **To:** 2016



جامعة حائل
University of Ha'il

Lab Supervisor

Department of Electronic Engineering - Yarmouk University Irbid – Jordan

From: 2009 **To:** 2011



For the following courses and labs:

- Integrated Circuit Design Course
- Selected Topics (Filter Design and Microcontroller Programming and System Design)
- Electronics (I) Course
- Electronic Maintenance Lab
- Electronics Lab (I, II, III)
- Digital Electronics Laboratories
- Digital Logic Design Lab
- Programmable Circuit
- Microcontroller Laboratories
- Medical Instrumentation Lab
- Microprocessor and Microcontroller System Design Laboratories.

Medicine Machine and Hospital Device Engineer

Royal Medical Services Institute of Biomedical Technology

Amman – Jordan **From: 2008 To: 2009**



Education

2016-2020 **University of Leeds, Leeds, UK.**
(Graduated in 18th of January 2021)

Ph.D. Philosophy of Science, Mechanical Engineering (CAD CAM).

Thesis Title: 3D Model Slicing Algorithms for Enhanced Quality of Additive Manufactured Part.

The Major contribution of this work is, the implementation of 3D curved slicer with automatic generation for the toolpath planning, starting from the STL model of the part and ending by the G-code .Also, this work modifies one of the available curved slicing offset algorithms; the Four Vector cross Product (FVCP) offset algorithm, then develops this algorithm to implement a new curved slicing algorithm; the Simplified Four Vector Cross Product Algorithm (SFVCP). in the SFVCP slicing approach, a novel algorithm is developed to obtain the bottom surface from the STL model of the part being produced, then offset this surface to generate the curved layers, after that the resulting consecutive curved layers are offset subsequently using the same offset algorithm to build the entire part. Another new 3D curved slicing algorithm is implemented in this work, based on this 3D curved slicer, the resulting consecutive curved layers from the SFVCP slicing algorithm are used as curved slicing plane to slice the STL model of the part. Both the SFVCP and 3D curved slicer are evaluated using the Additive Robot Manufacturing System (ARMS) which was developed by a group at Leeds University.

2008-2011 **Yarmouk University, Irbid, Jordan.**

Master of Science, Industrial Automation Engineering.

Thesis Title: Metamodeling Methods for Analog Circuit Design Automation.

2003-2008 **Yarmouk University, Irbid, Jordan.**

Bachelor of Science, Electrical-Electronics Engineering.

Project 1: Security and Smart RF Parking System Based on Microcontroller.

Project 2: Text To speech Conversion System Based on GSM and Microcontroller.

Research and Publish

- Kriging Piecewise Metamodeling, INASE Conferences in Bratislava, Slovakia, 28 Nov 2015. Also, it has been published in The International Journal of Systems Applications, Engineering & Development NAUN.org Journals.
- The paper in the following link: <http://www.naun.org/cms.action?id=10211>.
- Three Preliminary Curved layer Slicing Methodology. This paper is drafted and Expected to be published after graduation.
- Three-Dimensional Curved Slicing. This paper is drafted and Expected to be published after graduation.

Technical Skills

- **Microcontroller Programming:** PIC Microcontroller (Interactive C)
- **Programming Language:** C, C++ and C#, Matlab
- **CAD Packages:** AutoCAD 2000
- **Design and Simulation Packages:** Automation Pspice, Hspice and Circuit Maker, ExpressPCB, ISIS Professional, Simulink simulators, Multisim simulator, Xilinx simulator.

Certifications and Honor Awards

- Certificate of Computer Skills Training Course, Oxford Cultural Center,
- Irbid, Jordan, Sep.2009-Dec.2009
- Certificate of AutoCAD 2D&3D Training Course. Oxford Cultural Center. Irbid, Jordan, Sep.2009-Nov.2009
- Certificate of Computer Maintenance Techniques Training Course, Oxford Cultural Center, Irbid, Jordan, Sep.2009-Nov.2009

- Certificate of Participation and Presentation of the National Technology Parade, May.2008
- Certificate of Matlab Programming Training Course, Oxford Cultural Center, Irbid, Jordan.
- Certificate of Medicine Machine and Hospital Device Engineer, Royal Medical Services Institute of Biomedical Technology, Amman, Jordan, Sep.2009- Sep.2010
- Certificate of participating in an academic conference in Hai'l university and wining the second position for Smart Fire Alarm System, Hai'l, KSA. March 2014.
- Certificate of participating in an academic conference in Hai'l university and winning the second position for Smart Serial Home Automation System, Hai'l, KAS. March 2015.
- Certificate of participating in the 6th academic conference for Smart Serial Home Automation System, Jeddah, KSA. April 2015.

References

Available upon request.