Muhammad Dawood Asghar

Work : 3500, Hasselt, Belgium

Email: dawoodasghar6@gmail.com **Phone:** (+32) 465160417

LinkedIn: https://www.linkedin.com/in/dawoodasghar/

Date of birth: 1 Jan 1997 **Nationality:** Pakistani

ABOUT ME

Muhammad Dawood Asghar, a PhD researcher at KU LEUVEN Belgium. He has 5 Tapeout projects experience in Integrated Circuits and Systems Design. He has served as an IC Design Engineer & Trainer at GS Microelectronics (a Si-valley based company) Oman. He has completed his Master's with fellowship in IC Design from FAST-NUCES ISB, Pakistan. He is Skilled in Cadence & Open-Source EDA tools. His area of Expertise is Analog/Mixed-Signal IC Design. He is experienced in design and layout in TSMC 65nm/130nm and SkyWater 130nm CMOS Process.

WORK EXPERIENCE

[18 Mar 2024 – Current]

PhD Researcher

KU Leuven https://iiw.kuleuven.be/onderzoek/ess

City: Diepenbeek

Country: Belgium

Name of unit or department: Electrical Engineering Department (ESAT)

Working on EU Funded Green Agile Semiconductor Production (**GRASP**) Project. https://grasp-project.eu/

[Sep 2022 – Jul 2023]

IC Design Engineer & Trainer

GS Microelectronics (Si-Valley based Company) https://gsme.com/

City: Muscat

Country: Oman

- This "Train to Hire" program in Chip Design is one of its kind in entire GCC region, to train the Engineers of OMAN in the field of Integrated Circuits and Systems Design.
- Supervised three Analog/Mixed-Signal Tapeout projects (TSMC 65nm CMOS process) projects using Commercial EDA tools & prepared Testing plans.
- Conducted Analog/Mixed-Signal IC Design Labs using Commercial EDA tools.
- Conducted Signal Integrity Labs.

[Sep 2021 – Oct 2022]

IC Design PG Fellow

RFCS2 and IC Design Lab, FAST-NUCES

City: Islamabad

Country: Pakistan

- Tapedout two Analog/Mixed-Signal projects in SKYWATER 130nm CMOS Process using Open-Source tools.
- Proficiently designed Analog/Mixed-Signal circuits using commercial EDA tools, including DACs, ADCs, Op-Amps, Comparators, Switched Capacitor Circuits, VCOs, and BGRs.
- Proficient in Digital Circuits (RTL2GDS-II) such as Finite State Machines, Shift Registers, Adders, Multipliers, and Digital Filters.
- Possess comprehensive knowledge of signal integrity issues such as cross-talk, eye diagrams, EMC/I, shielding, ESD, and terminations.
- Knowledge of high frequency PCB design, transmission lines, antennas, S-parameters, wide-band impedance matching, on-chip transformers, and near-field data transfer & substrate materials, IC packages, and connectors.

- Conducted Analog IC Design Lab and Digital IC Design Labs.
- Documented Top Level Integration Lab manuals using Analog Design Environment (ADE).

Research Group: [Visit RFCS2 Lab FAST-NUCES ISB]

[Oct 2020 – Jul 2021]

Lab Engineer

Riphah International University

City: Faisalabad

Country: Pakistan

- Conducted Control Systems (National Instruments), Communication Systems, and Signals & Systems labs.
- Assisted in multiple courses as a TA.

EDUCATION AND TRAINING

[Sep 2021 – Jun 2023]

MS Electrical Engineering (IC Design)

FAST-National University of Computer and Emerging Sciences http://isb.nu.edu.pk/rfcs2/index.htm

City: Islamabad

Country: Pakistan

Final grade: CGPA: 3.50 / 4.00

Thesis: Spatial Sigma-Delta ADC for Massive MIMO Applications

Relevant Courses:

- Analog and Discrete Electronics
- Digital Integrated Circuit Design
- Digital ICs: Synthesis and Physical Design
- Mixed Signal Integrated Circuit Design
- SoC, Packaging and Signal Integrity
- Advanced Digital Signal Processing
- Advanced Embedded Systems

[Aug 2016 – Jun 2020]

BSc Electrical Engineering

University of Engineering and Technology https://www.uet.edu.pk/

City: Lahore

Country: Pakistan

Final grade: CGPA: 3.25 / 4.00

Thesis: IoT based Induction Motor Monitoring and Drive (15Hp) Based on SVPWM

PROJECTS

[7 Jun 2023] **OMAN-I (TSMC 65nm CMOS Process)**

My part was to lead the **25MSPS 8-bit Flash ADC for Radio Digitization** Module.

Key Components:

- Folded Casode Op-Amp
- Dynamic Comparators with pre-amps
- Thermometer DAC

[7 Jun 2023] **OMAN-II (TSMC 65nm CMOS Process)**

1. Power Management Integrated Circuit
2. Sensor and ADC based Data Acquisition System

[25 Nov 2022] **ABiDi-I (SkyWater 130nm CMOS Process)**

1. Spatial Sigma-Delta ADC for Massive MIMO Applications
2. Fast Transient Response Dc-Dc Buck Converter

HONOURS AND AWARDS

[Aug 2021] **Received Post-Graduate Fellowship in IC Design Awarding institution:** FAST - NUCES

Fifteen candidates were selected for this one-of-a-kind, fully funded Master's Program in Integrated Circuit Design, available all over Pakistan.

[Apr 2022] **Won 2 Tapeout project ideas in IEEE SSCS-22 Chipathon Contest Awarding institution:** Efabless Corporation

In the IEEE Solid State Circuits Society (SSCS) PICO Chipathon Contest, 22 projects from around the world were selected for free-of-cost fabrication. The funding (10,000 USD per die) for the fabrication was provided by efabless corporation.

AWARDS AND HONORS

[Aug 2021] **Received Post-Graduate Fellowship in IC Design**

Fifteen candidates were selected for this one-of-a-kind, fully funded Master's Program in Integrated Circuit Design, available all over Pakistan.

[Apr 2021] **Won 2 Tapeout project ideas in IEEE SSCS-22 Chipathon Contest**

In the IEEE Solid State Circuits Society (SSCS) PICO Chipathon Contest, 22 projects from around the world were selected for free-of-cost fabrication. The funding (10,000 USD per die) for the fabrication was provided by efabless corporation.

DIGITAL SKILLS

Analog and Mixed Signal ASIC design | Cadence Virtuoso and Spectre | Mentor Graphics - Calibre | Cadence Layout Suite | Digital IC Design | Cadence Genus | Cadence Virtuoso, Genus & Innovus | OpenLANE | RTL Design and Backend APR | Keysight's ADS | Matlab/Simulik | proteus 8.0 professional | NI labview basics | Work with Arduino | Raspberry Pi | Text processing (Word, LaTeX) | ADC

LANGUAGE SKILLS

Mother tongue(s): Urdu

Other language(s):

English

LISTENING C2 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C2 **SPOKEN INTERACTION** C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

CERTIFICATIONS

[Dec 2021] **Open Source IC Design Tools Workshop**

[Apr 2022] **IC Manufacturing Fabrication Process for Electronic Systems**

RECOMMENDATIONS

Associate Professor
Name: Dr. Kris Myny
Email: kris.myny@kuleuven.be

Computer Security and Industrial Cryptography (COSIC), Diepenbeek

KU Leuven BELGIUM