

# HUZAIFA ABRAR

## Avionics Engineer

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## WORK EXPERIENCE

### LabVIEW / MATLAB Developer

#### National Aerospace Science and Technology Park (NASTP)

Jul 2022 – Ongoing

Islamabad, PK

- Responsible for developing and implementing DSP chains and algorithms using tools such as Labview, Vivado, and Matlab.
- Working with SDRs, USRPs, and FlexRIO to develop solutions for a variety of applications.
- Revised, modularized and updated old code bases to modern development standards, reducing operating costs, and improving functionality.
- Collaborated on stages of systems development life-cycle from requirement gathering to production releases.

### Junior Design Engineer

#### Nextek Services

Aug 2021 – Jul 2022

Islamabad, PK

- Addressed design challenges and evaluated alternative design models to meet project requirements.
- Worked with engineering teams in developing and testing aerospace products.
- Was responsible for designing of digital circuits, Verilog Coding, LabView coding, Circuits Verification.

### Engineering Intern

#### Pakistan Aeronautical Complex

Jul 2019

Kamra, PK

- Worked with different engineering teams, was given an overview of different avionics systems, their importance and working to improve overall knowledge.
- Assisted senior engineers and management with clerical duties to keep department functioning and workflows running smoothly.
- Learned about Radar Warning System (RWS), Radar Warning Receiver (RWR), Identification b/w Friend and Foe (IFF) system, Griffon Radar, KIJ-07 Radar, Active Electronically Scanned Array (AESA) Radar.

## EDUCATION

### BS Avionics

#### Institute of Space Technology

Sept 2017 – Aug 2021

Islamabad, PK

**Courses:** Electronics, Analog and Digital Communication, Digital Logic Design, Microcontrollers and Microprocessors, Avionics System Design, Radar Theory, Antenna Design and theory, Control systems, Flight Control Systems, Guidance and Navigation, Aerodynamics. **Project:** Development of a Core on FPGA for Mil Std 1553B Communication Protocol.

## SUMMARY

Experienced Avionics Engineer with a versatile background and over two years of expertise in electronics design, circuit verification, and Verilog-based hardware implementation. Proficient in LabVIEW, MATLAB, and various engineering tools. Passionate about technology and eager to leverage technical expertise and cross-functional teamwork acumen to create innovative solutions. Strong background in computer-aided engineering and value engineering skills.

## SKILLS

Problem Solving

Management

Microsoft Office (Word, Excel, Powerpoint)

Teamwork

LabView

Vivado

MATLAB

Simulink

Verilog

FPGAs

SDRs

Proteus

OrCAD

NI Multisim

NI Hardware

C++

## PROJECTS

### Development of Phase Calibration Application for maximising transmitter power NASTP

Jan 2023

- Measured phase of each TR module

### Digital Audio Control System (DACS) of JF-17 Aircraft

#### NexTek Service

Oct 2021 – Jun 2022

- Co-developed Electronic circuits for impedance matching, Analog filtering, Gain adjustment, FPGA Controller.
- Verilog coding of custom Rs-422 protocol for Communication between LRUs, coding for ADCs and DACs functionality.
- Algorithm was written in Verilog language consisting of FIR filtering and Audio mixing and routing.

### Final Year Project: Development of a Core on FPGA for Mil Std 1553B Protocol

#### Institute of Space Technology

Sep 2020 – Jul 2021

## ORGANIZATIONS

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### Shaukat Khanum Hospital (Student Ambassador)

📅 Feb 2021 – Dec 2021

Made a Team of 15 Volunteers and worked with them for Fund Raising for SKMCH Karachi. Organized different sessions on Cancer awareness.

### HULT Prize

📅 Mar 2020

Appointed as Team Lead Media for HULT Prize Regionals Summit Islamabad 2020.

## CERTIFICATES

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Certificate of Acknowledgement from Institute of Space Technology for organizing Dramatics event at IST youth Carnival.(2018)

Certificate of Acknowledgement from Institute of Space Technology for organizing Content Writing event at World Space Week.(2018)

Certificate of Acknowledgement from Institute of Space Technology in Media Relations of IST youth Carnival. (2019)

Certificate of Appreciation from Pakistan Aeronautical Complex, Kamra. (2019)

Certificate of Acknowledgement from IST for Media Coverage in TEDx Institute of Space Technology. (2019)

Certificate of Appreciation from Shaukat Khanum Memorial Cancer Hospital. (2019)

Best Actor Award HITEC Olympiad 2020

Certificate of Appreciation from HULT Prize Regional Summit (2020)

## LANGUAGES

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English  
Urdu  
Punjabi



- Memory Mapping was done for simulating Bus monitor operation. (Bus Monitor is a component of Mil Std 1553B responsible for data storage)
- UART Protocol was used for data exchange between PC and FPGA. A custom protocol was written for realization of 1553B protocol.
- Docklight software was used for data visualization.

### Inertial Navigation System (INS), Instrument Landing System (ILS), IFF Stimulators

#### NexTek Service

- Upgraded previous LabView codes of these stimulators, increasing their efficiency.
- NI USRP based implementation for ILS and IFF Stimulators.

### Brightness Control Panel of JF-17

#### NexTek Service

- Rectified existing errors and introduced changes in the Circuit.

### Transmission of Audio Signals through LiFi

#### Institute of Space Technology

- Designed basic electronic circuits for audio amplification and used LEDs for converting these audio signals into light. At receiver end Solar panel converted the light signals into electric signals.

### Avionics System Design

#### Institute of Space Technology

- Designed an Avionics System of an Electronic Warfare Aircraft with reference of EA-18G Growler.