

Aqib Rafiq

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EDUCATION

UNIVERSITY OF KARACHI

MASTERS IN AEROSPACE

CGPA: 3.8

Grad. 2020

UNIVERSITY OF KARACHI

BACHELORS IN SPACE SCIENCE AND TECHNOLOGY

CGPA: 3.4

Grad. 2018

P.E.C.H.S GOVT COLLEGE

INTERMEDIATE (PRE ENGINEERING)

Grade A

Grad. 2014

SUPERIOR MODEL SCHOOL

MATRICULATION (SCIENCE)

Grade A

Grad. 2011

EXPERIENCE

ALISTESHAR | AERIAL SURVEY MANAGER

Sep 2024 - Present | Kingdom Of Saudi Arabia

- Manage a team of pilots and ground staff to execute aerial surveys efficiently and safely.
- Implement quality control measures to guarantee the integrity of survey data.
- Coordinate with clients to understand project requirements and deliver customized survey solutions.
- Ensure compliance with aviation regulations and safety protocols during all survey missions.
- Drive continuous improvement by evaluating survey processes, implementing feedback mechanisms, and adopting innovative technologies in aerial surveying.
- Develop and implement comprehensive flight risk assessment protocols to ensure safe and efficient survey missions.
- Conduct training sessions for pilots and team members on drone operation techniques, safety procedures, and data collection methods.
- Create detailed operation manuals outlining standard procedures, emergency protocols, and best practices for aerial survey operations.

ESBAAR | SR. RPAS PILOT

Feb 2022 - Aug 2024 | Oman

• EASA

Certified A1/A3

• FAA

Certified Part-107

• CDT-UK

Drone Training Course

• UASG-PAK

RPAS Training Certificate

• Pilot Institute

Part-107 Night Training Module

• FAA

P3 Drone Law Regulations

• FAA

10 Decision Making Concepts For UAS Pilots

• Pilot Institute

Recreational Flying Made Easy

• FAA

S-UAS: Regulations, Laws, Airspace Ownership And Faa Enforcement

• FAA

SUAS Night Operations, Best Practices

• FAA

SUAS Safety Risk Mitigation

- Team Leader for VLOS, EVLOS and BVLOS operations to conduct safe and efficient operations.
- Gas leak detection by using OGI Sensor.
- Tank and flare hotspot detection.
- Seismic operation Via Drone 1st time in middle East.
- Lidar, GPR, 2D/3D mapping: GCP/RTK/PPK methods,
- Follow all high standards of HSE and Life Saving Rules (LSR)
- Provide training and guidance to junior team members on best practices related to GIS and drone operations.
- Assist and develop guidelines for surveying and inspection.
- Perform risk assessment, pre/post-mission logs and safety brief.
- Adhere to all CAA regulations and maintain up-to-date knowledge on any changes or updates to drone-related regulations and technology.

118SED, PAKISTAN AIR FORCE | AIRCRAFT SIMULATOR ENGR.

May 2021 - Feb 2022 | Pakistan

- Worked on a Satellite data, terrain data set and raster imagery to build real world environments for Pakistan Air Force and major Airports of Pakistan and China using Presagis and Esri suite.
- Maintenance and up-gradation of several Aircraft Simulators like F7P, T37, SMK, KE03 and IL78.
- Multiple simulators out the window (OTW) projection systems were created utilising various methodologies or strategies to provide a seamless vision.
- Successfully build real world Karachi 3D Models with actual textures by using Esri Suite and open Street map.
- Strong command on communication data protocols like DDS, TCP, UDP and CIGI.

SKILLS

PROGRAMMING

• C++ • C Sharp • Python • MATLAB

GIS/ IMAGE GENERATION

• ESRI Suite • Presagis Suite
• Global Mapper • Erdas Imagine
• Warpalizer

UAV MAPPING

• Pix4D • Drone Deploy • Reality Capture • Agisoft Metashape

DESIGN AND SIMULATION

• XFLR5 • Ansys Analysis • Simulink
• Creator • SolidWorks
• Sketch up

UAV FLYING EXPERIENCE

• Yuneec Typhoon H real sense
• Sense Fly EBEE
• UAS-G Skywalker
• Yuneec Q500
• DJI Phantom 4 pro
• DJI Phantom 4 pro V2.0 Plus
• DJI M300RTK
• DJI M350RTK

HARDWARE

• Pixhawk • NAZA • APM • Raspberry Pi
• Arduino • AR/VR Headsets

TRAINING &

CERTIFICATIONS

• Health Safety & Enviroments (HSE)
• H2S Safety and Escape
• PMI Agile Certified Practitioner®
• Photogrammetry for Product Design AEC
• Project Resource Management
• Certified SOLIDWORKS Professional
• Pix4D Drone Mapping
• SOLIDWORKS: Advanced Simulation
• Using Python for Automation

UAS GLOBAL PVT LMT | SR. UAV DEVELOPMENT ENGR & RPAS PILOT

Jan 2018 – May 2021 | Pakistan

- Flying wing UCAV (down-size prototype) has designed for surveillance, target acquisition and reconnaissance (ZF-VIPER).
- Fixed-wing UAV for surveillance and mapping that has been developed (Skywalker).
- Worked on indigenous Flight Dynamic Modeling with the autonomous flight control system (Autopilot) and Integrate flight Gear with MATLAB/Simulink to optimize the PID's of flight controller.
- The auto tuner for PID was designed using Python as well.
- Works with photogrammetry software's in order to produce orthomosaic and dense point clouds, DEM, DSM, DTM and Stockpile volumetric measurements.
- Conducted Pre-flight checks and ensured the drone was in proper working order before each flight
- Repaired drones when they returned from flights, replacing parts as necessary and ensuring that they were in good working condition before the next flight.

ESBAAR PROJECTS SUMMARY

PETROLEUM DEVELOPMENT OMAN (PDO), CC ENERGY DEVELOPMENT (CCED), MUSCAT ELECTRICITY TRANSMISSION COMPANY, BGP INTERNATION | SR. RPAS PILOT

Feb 2021 – Aug 2024 | Oman

I have more than 1300 flight hours in Oman and have worked with a number of companies (both local and international) during this period of my employment with ESBAAR. The following list includes the unique and vital projects I performed for the drone industry:

- Ground Penetrating Radar (GPR). I am Oman's first drone pilot to begin operations with GPR. With the help of the M300, I tested and integrated GPR, and the outcomes were remarkable. The combination of GPR technology with drones is a cutting-edge innovation, allowing for remote and efficient data collection, analysis and mapping of underground structures.
- Magnetometer Sensor UCGS, used for the detection of Unexploded Ordnance (UXO).
- Innova HyperQ is a 3rd party payload which I used in Seismic operation
- YellowScan Lidar used for point cloud mesh.

118SED PROJECTS SUMMARY

DBGS / FDM PROJECTS | AIRCRAFT SIMULATOR ENGR.

May 2021 – Jan 2022 | Pakistan

Throughout my career in the Pakistan Air Force, I have successfully finished a number of IG and FDM deployment and upgrade projects. I worked on the C-130 cargo plane full flight simulator (FFS), the T-37 part task trainer simulator (PTT), the IL-78 part task trainer simulator (PTT), the ZDK-KE03 high fidelity simulator (FFS), as well as the K-8 and F7P fighter jet simulators.

UAS-GLOBAL PROJECTS SUMMARY

AERIAL INSPECTION/STOCKPILE CALCULATION AND AGRICULTURE PROJECTS | SR. RPAS PILOT

JAN 2018 – MAY 2021 | Pakistan

- Stockpile calculation of Gypsum/Clinker/Coal of more than 10x stocks for Thatta Cement in Sindh.
- Aerial Inspection of 33WTG Turbines 50MW Sachal Wind Farm ,Jhimpir, Sindh.
- Aerial Inspection of Telco Towers.
- Stand count and weed detection of multiple Rice field, Sindh.
- BEE Energy, Petroleum sites survey more than 50x sites all over Pakistan

ACHIEVEMENTS

- Participated in **IDEAS** Expo, Project: Flying Wing UAV (ZF Viper) 2018
- 3rd Invention to Innovation Summit, Sindh (ORIC) achieved 1st prize and Cash award Rs: 10,000
Project: Fixed-Wing UAV (ZF Viper) 2018
- Institute of Space Science and Technology Semester Project exhibition achieved 1st position
Project: Quad copter (Racing Drone) 2017
- NASA's Space App Challenge achieved 2nd position
Project: Loitering Munitions 2017

RESEARCH CONTRIBUTIONS

- Thesis on self-designed Flying-wing UAV model analyzed by CFD and Radar-cross section.
- Research paper on Flight dynamic modeling with autonomous flight control system (Autopilot) design (In progress).