Raees Ahmad

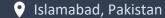
Computational Physicist / Navigation Algorithm Designer 44000, Islamabad, Pakistan



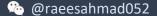
R Personal Portfolio

@raeesahmad052

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in @raeesahmad052



13/06/1989



ዶ■ Profile

A highly motivated Computational Physicist with interest in Inertial & Integrated Navigation Algorithm Design & Development, Kalman Filtering & Nonlinear State Estimation, Fault Detection & Isolation and Navigation System Testing & Performance Analysis. Passionate and committed to continuous personal development, embracing challenges, and contributing innovative solutions to advance organizational goals and Navigation Technologies.

Education

Master of Philosophy in Physics

PIEAS, Islamabad

CGPA: 3.96/4.0 (99.0%), Cum Laude

Thesis title: Attitude and Heading Refrence System (AHRS) aided by magnetometer

Bachelor of Study in Physics

University of Gujrat

CGPA: 3.62/4.0 (78.67 %)

FSc. Pre-Engineering

Government Science College, Gujrat

Division: 1st

Matric (Science)

Government High School Hajiwala Gujrat

Division: 1st

2003 - 2005Gujrat, Pakistan

12/2011 - 11/2013

Islamabad, Pakistan

09/2007 - 12/2011

Gujrat, Pakistan

Gujrat, Pakistan

2005 - 2007

Professional Experience

Navigation Algorithm Designer / Researcher

A Public Sector R&D Organization

11/2013 - present Islamabad, Pakistan

Freelance MATLAB

Fiverr International Ltd.

Online



Applied Kalman Filtering (Specialization) ■ University of Colorado System through Coursera □	12/2024
87 Classroom Hours (Non-Credit Specialization with 4 Courses)	
Course 01: Kalman Filter Boot Camp (and State Estimation)	
Course 02: Linear Kalman Filter Deep Dive (and Target Tracking)	
Course 03: Nonlinear Kalman Filters (and Parameters Estimation)	
Course 04: Particle Filters (and Navigation)	
Fundamentals of Flight Mechanics (Specialization)	09/2024
■ ISAE-SUPAERO through Coursera 🖸	
25 Classroom Hours (Non-Credit Specialization with 4 Courses)	
Course 01: Flight Mechanics - The Basis	
Course 02: Flight Mechanics – Anemobarometry	
Course 03: Flight Mechanics - Lift and Trajectory	
Course 04: Flight Mechanics - Propulsive Balance & Energy	
MATLAB Programming for Engineers and Scientists (Specialization) ■ Vanderbilt University through Coursera 113 Classroom Hours (Non-Credit Specialization with 3 Courses) ■ Course 01: Introduction to Programming with MATLAB ■ Course 02: Mastering Programming with MATLAB ■ Course 03: Introduction to Data, Signal and Image Analysis	09/2024
Introduction to Artificial Intelligence (AI)	11/2021
IBM course through Coursera □	
13 Classroom Hours (Non-Credit)	
AI Enabling with Predictive Analytics Inference Workshop for Industry Applications 5 Days Course by AITech NCP	10/2025
MATLAB Fundamentals	10/2025
MathWorks Training Services ☑	
MATLAB Onramp	
SIMULINK Onramp	



Attitude and Heading Reference System (AHRS) aided by magnetometers

Design and development of AHRS using 9-DOF MPU-9250 IMU with optimal gains in C/C++

Oscilating/Moving base transfer alignment scheme for Strapdown Navigation Systems

Developed and tested oscilated/moving base transfer alignment scheme over real time data.

INS/GNSS integrated Algorithm using Linearized and Extended Kalman Filters

Designed & developed a loosely coupled INS/GNSS integration algorith with 15-states EKF

GNSS Outliers Rejection Strategy for relaiable Integrated Navigation

Designed & developed GNSS outliers rejection scheme based on comparison of differential changes of INS/GNSS and state covariances

3rd Order Vertical Channel damping loop algorithm for integration of INS/ADS/RA.

Developed a vertical channel damping loop for INS integration with ADS to provide smooth and reliable altitude.



Awards

Gold Medal2013Pakistan Institute of Enginering & Applied Sciences □IslamabadFor securing 1st Postion in batch of M.Phil Physics (2011-2013)Pakistan

Certificate of Apperciation

Pakistan Institute of Enginering & Applied Sciences Islamabad
For outstanding performance in Thesis Project
Pakistan

Merit Scholarship

NESCOM Scholarship for 2 years M.Phil Physics at PIEAS

2011 Islamabad Pakistan



Skills

Softwares (MATLAB / SIMULINK, Mathematica, Lab Windows/CVI, LabView, MS Office) **Programming Languages** (MATLAB, C/C++ (Microsoft Visual Studio), Python, Latex)



Languages

English, Urdu, Punjabi

Interests



- Sports: Cricket (Amateur), Badminton (Amateur), Table Tennis (Beginner)
- E-Gaming: IGI, Need4Speed

ം Reference

Dr. Shakeel Ur Rehman, *Professor,* Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad. shakeel@pieas.edu.pk

Dr. Aman Ur Rehman, *Professor,* Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad. amansadiq@gmail.com

Dr. Shahid Baig, *Senior Researcher,* Center of Excellence in Science and Technology (CESAT), Islamabad. sbaig72@yahoo.com