

# SYED JAWAD AKHTAR

COMPUTER ENGINEERING STUDENT | Chairperson MTS AUV ZHCET Club

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## EDUCATION

Bachelors in Computer Engineering  
Zakir Husain College of Engineering and Technology

2016 – Present Aligarh, India

Senior Secondary Education

International Indian School

2016 Jeddah, Saudi Arabia

Central Board of Secondary Education

Secondary Education

International Indian School

2014 Jeddah, Saudi Arabia

Central Board of Secondary Education

## EXPERIENCE

Summer Research Internship

The University of Kiel

June 2019 – August 2019 Kiel, Germany

- Learning Artificial Neural Networks (ANN) and it's applications on Geo-mechanics
- Analytical ANN was used for predicting different properties of sands and rocks. Like Thermal conductivity of sand based on porosity and saturation and seismic wave velocities of rocks using different chemical compositions

Co Coordinator

Autonomous Underwater Club - ZHCET

August 2018 – May 2019 Aligarh, Uttar Pradesh

- Vehicle simulation in Gazebo Robotics Simulator
- Detailed studying and implementation of acoustic localization on the AUV
- Social media manager and outreach manager

Summer Intern

Saudi White Cement

June – July 2018 Saudi Arabia

- Training of security systems in an industrial company - Tutored on N+ CompTIA course
- Hands on Experience on ERP (Enterprise Resource Planning) - Oracle  
Describing Cash Flow, Inventory & other major modules used in a manufacturing company

## PROJECTS

Building a micro UUV - Final Year Project

Zakir Husain College of Engineering & Technology

August - On going India

Phase 1: Simulation of Unmanned Underwater Vehicles (UUV) for detecting underwater pipeline defects using Reinforcement Learning.

Phase 2 - Building a miniature AUV for a real-life demonstration

Tools & Algorithms: Gazebo Simulator, Unity, Robot Operating System (ROS), RViz, Blender, Google Sketch-up

Acoustic Localization on AUV's

Autonomous Underwater Vehicle Club

January 2019 India

Localization of a beacon underwater using an array of hydrophones attached to the vehicle.

Tools & Algorithms: NI Labview, NI MyRIO board, Time Delay of Arrival (TDOA), Aquarian H1C hydrophones

Camera Tuning using Deep Reinforcement Learning

Zakir Husain College of Engineering & Technology

December 2018 India

Deep reinforcement learning implemented to tune white-balance settings of android camera according to the environment. -

Minor Project of Junior year

Tools & Libraries: Keras library, socket programming, CNN data set MobileNetV2, Android App programming (Java)

## SCORES

English Proficiency Test

TOEFL iBT

09 November 2019 New Delhi, India

Highest Score: 96/120, Reading – 24/30, Listening – 22/30, Speaking – 25/30, Writing – 25/30

## RESEARCH

Effective thermal conductivity of unsaturated sand using artificial neural network (ANN) and lattice element method (LEM)

**International Journal of Thermal Sciences**

📅 February 2020

- <https://doi.org/10.1007/s00231-020-02833-w>
- Project: GeoMInt - Geomechanical integrity of host and barrier rocks - experiment, modeling and analysis of discontinuities  
**Authors:** Zarghaam Haider Rizvi, Husain Haider Zaidi, Syed Jawad Akhtar, Amir Shoarian Sattari, Frank Wuttke

Estimation of seismic wave velocities of crustal metamorphic rocks using ANN

**Materials today: Proceedings**

📅 December 2019

- <https://doi.org/10.1016/j.matpr.2019.11.320>
- Project: GeoMInt - Geomechanical integrity of host and barrier rocks - experiment, modeling and analysis of discontinuities  
**Authors:** Zarghaam Haider Rizvi, Syed Jawad Akhtar, Jorg Follmann, Frank Wuttke

Effective thermal conductivity of unsaturated soils based on deep learning algorithm

**2nd International Conference on Energy Geotechnics**

📅 September 2020

📍 La Jolla, California

- In review
- Project: BioSolidEncap - Stabilisation of Tailing slopes by controlled Bio-cementation  
**Authors:** Zarghaam Haider Rizvi, Syed Jawad Akhtar, Wurood Sabeeh, Frank Wuttke

## PATENTS

**A low cost Autonomous Underwater Vehicle having five degrees of freedom and two thrusters**

📅 March 2018

📍 United States

- U.S. Patent Filing No. **15949553**

**6 Pin Underwater Electrical Connector**

📅 July 2018

📍 India

- Indian Patent Application No. **201811027144**
- Published

## SKILLS

Robot Operating System

Gazebo Robotic Simulator

Google Sketch Up

Simulink

Labview

Android Studio

LaTeX

## ACHIEVEMENTS



**Students Autonomous Underwater Vehicle Competition 2019**

Overall 4th position of the team nation wide - was in the computer team



**Singapore AUV Challenge 2018**

Lead the team and reached the preliminary round



**Co - Founder of AUV ZHCET Club**

One of the founding members of the technical club in the college



**Top 4 Idea Presentation**

on AUV Surveillance at Riyadh Inspiring Entrepreneurs Summit 2018



**1st Prize in Mobile app Mock up competition by IEEE**

Made an app for foodies and food makers ranging from professional chefs to moms to share recipes - The Food Up app



**HackDTU Hackathon**

Showcased and implemented an online Car Parking system



**School Topper in Computer Science subject**

In Senior secondary school, bagged the first position at school level by scoring 96 % in Computer Science subject

## STUDENT MEMBERSHIPS

IEEE Oceanic Engineering

**Zakir Husain College of Engineering & Technology**

📅 March 2019

📍 India

Marine Technology Society

**Zakir Husain College of Engineering & Technology**

📅 April 2020

📍 India

## CO-CURRICULAR



**Organizer at blood donation campaign**



**Official Photographer of hall festival**



**First prize in photography competition in hall festival**

Photoshop CS6

Premiere CS6

Audition CS6

## WORKSHOPS/CONFERENCES

- NoSQL, Bigdata & Artificial Intelligence Conference by Datumcom
- UAV's and Drones
- Android Web Development and Web Designing

## LEARNING

- **Artificial Intelligence for Robotics** – course provided by Udacity (April. 2020)
- **Data Analysis and Machine Learning using Python** – By Dept. of Mechanical Engineering, Zakir Husain College of Engineering and Technology (Jan. 2019)
- **Programming for Robotics - ROS** – By Institute of Robotics and Intelligent Systems, Robotics Systems Lab, ETH Zurich (Dec. 2018)
- **Deep Learning A-Z™** – Hands on Artificial Neural Networks Proficiency course on Python on Udemy

## LANGUAGES

C

C++

Java

Python

Java

MATLAB

SQL

Markdown

## REFERENCES

**Prof. Dr.-ing habil. Frank Wuttke**

**Chair of Geomechanics and Geotechnics**

@ Institute of Applied Science

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The University of Kiel

Kiel-24118, GERMANY

**Dr. Saleem Anwar Khan**

**Associate Professor**

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