

# ABDUL REHMAN

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## EDUCATION

### Masters in Control Science and Engineering | CUG, Wuhan, China

SEP 2018 – JUN 2021

(1yr courses, 2yrs research) Thesis: Speaker Independent Speech Emotion Recognition with Active Learning

- [Second prize in CUG's postgraduate research awards, 2020](#)
- [Bronze prize in China's 5<sup>th</sup> Internet+ Innovation and Entrepreneurship Competition, 2019](#)

### BS in Electrical Engineering | PIEAS, Islamabad, Pakistan

OCT 2010 – JAN 2015

Thesis: RF RSSI based outdoor localization



## WORK EXPERIENCE

### Design Engineer | Comcept (Pvt) Limited, Islamabad, Pakistan

Sep 2015 – Aug 2017 | R&D, design and development of hardware and software for military equipment.

### Technical Lead | QRS Personalization Factory, Wuhan, China

Jun 2019 – Sep 2020 | An IoT/HCI startup that ran out of funding.



## PUBLICATIONS

### Speech Emotion Recognition Based on Formant Characteristics Feature Extraction and Phoneme Type Convergence

| **Journal: Information Sciences**

2021, Zhen-Tao Liu; Abdul Rehman; Min Wu; Weihua Cao; Man Hao

### Speech Personality Recognition Based on Annotation Classification Using Log-likelihood Distance and Extraction of Essential Audio Features

| **Journal: IEEE Transactions on Multimedia**

2020, Zhen-Tao Liu; Abdul Rehman; Min Wu; Weihua Cao; Man Hao

### Cross-Corpus Speech Emotion Recognition Based on Hybrid Neural Networks

| **Conference: CCC2020**

2020, Abdul Rehman; Zhen-Tao Liu; Dan-Yun Li; Bao-Han Wu

### Speech Emotion Recognition Based on PSO-SVR Using Personality Clusters

| **Conference: IWACIII2019**

2020, Abdul Rehman; Zhen-Tao Liu; Min Wu; Weihua Cao; Man Hao



## SKILLS

- **Programming:** Python, C, JS, C#, in that order
- **ML:** TensorFlow, PyTorch, MATLAB, TinyML
- **EE:** Signals, RF, Sensors, IoT
- **Languages:**
  - [English: Advanced, TOEFL 106/120](#)
  - [Chinese: Intermediate, HSK4](#)
  - Urdu: Native



## PROJECTS

These are few projects that I have worked on independently or at the job:

- **Physiological monitoring system**  
SEP 2020 – CURRENT  
Our lab team is building a psychological diagnostic system for monitoring the long-term health patterns in a non-intrusive way.
- **Recognition of cross-lingual symbols in speech**  
SEP 2018 – CURRENT  
Thesis project. My goal is to figure out the emotional symbols in speech that are independent of the lexicon of a certain language group to recognize speech emotions cross-culturally.
- **AI based forecast from CO2 sensors and Satellite data**  
APRIL 2017 – MAY 2017  
Programming of weak-AI based prediction of crop yield. Application monitors and triggers the alarm when CO2 is increasing rapidly in cities or agricultural areas to predict a forthcoming drought.
- **Autoloader control system**  
MARCH 2017 – AUG 2017  
I designed the whole control mechanism of a loading robot that replaces one of the crew members inside the tank.
- **Road snow melting IoT system**  
MAY 2017 – JULY 2017  
IoT electronics and Web based control panel for Arctic highways in Norway. Simple project but a lot of moving parts in it.
- **Fire (projectile) control system**  
JULY 2016 – JULY 2017  
I was part of a team which designed the whole firing system for a military tank. My task was to design instruments to sense the environment wind, fog, trees, gravity etc.
- **Laser based target locker**  
DEC 2015 – JULY 2016  
Detection of target distance, material and surrounding environment using a high-power laser.
- **Long range passive LF metal detector**  
JAN 2017 – SEP 2017  
Detection of 10m deep underground metal tags using passive RF.
- **Remote fuel gauging system for air fuel tankers**  
JAN 2016 – MAY 2016  
Remotely monitors the air fuel taker fleet. It is monitored by web-based user interface.
- **NMEA0186, NMEA2k, Seataalk multiplexer and decoder with remote nodes**  
NOV 2015 – JAN 2016  
A device to merge all kind of sea instruments in one box. It uses multiple controllers and remote RF nodes to show all the ship's instruments on a single screen.

Some of my hobby projects are publicly available on GitHub: [github.com/tabahi](https://github.com/tabahi).