

## Contact



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## Employment

Since 2019

### Freelance Software Engineer



## Education

2016-2020

### BS, Computer Science

Balochistan University of IT,  
Engineering & Management  
Sciences (BUIEMS)



## Awards

Android Developers Challenge  
Google, 2020

Balochistan Star Award for IT  
Balochistan Stars, 2020

Hult Prize On-Campus Winner  
Hult Prize Foundation, 2020



## Design Skills

Photoshop / Illustrator 8 years

Adobe XD 3 years

Adobe After Effects 2 years

# Mirwise Khan

## Machine Learning Engineer

## Experience

### Machine Learning Engineer

Apr 2021 – May 2021

Emotion App – Audio based Sentiments Recognition

- Understood the an SVM based speech emotions recognition model with 67% prior accuracy.
- Switched from Keras and retrained the model on TensorFlow MobileNet with accuracy upto 85%.
- Built a custom TFLite model and embedded metadata graph.
- Built a sound recording android app with MVI architecture and integrated the TFLite Custom Model for offline use.

### Computer Vision Engineer - Fellowship

Apr 2021 – May 2021

Smart City Project – Government Innovation Lab

- Implemented attendance monitoring using face recognition with high resolution CCTV.
- Adopted the detection system to detect more than 2 faces in single frame.
- Improved the performance on high resolution cameras by 30%.
- Coordinated with frontend and backend teams of 8 members with skills in design and engineering.

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## Professional Skills

### Development – Client

- 1) Python Proficient in Task Automation, API Integration and Thread Management
- 2) Machine Learning Experienced in Data Preprocessing, Model Training, Deployment, Tensorflow, TFLite and MLKit.
- 3) Java Experienced in building JavaFX based UI applications. Skilled in configuring Webcam and Socket Connections. Experienced in designing APIs with Spring Boot and managing threads.
- 4) Version Control Adept in Git based version control – GitHub, GitLab & Bitbucket

### Development – Server/Cloud

- 1) Databases Experienced in MySQL, GCP Buckets and Cloud Firestore. Moderate understanding of Amazon AWS and MongoDB.
- 2) Administration Experienced in orchestrating Linux (Apache/Nginx) on a VPS (Virtual Private Server). Proficient in deploying apps to Google Cloud Suite – GCP AI Platform, GCP Functions, Firebase Web Hosting and CRON Jobs.

## Extracurricular

Alumni and Volunteer – Pak-US Alumni Network	2016-2021
Eco Saviour (Climate Change Awareness) Grant – Pak Red-Crescent Society	2018-2019
Multimedia Designer – ACM Buitems Student Chapter	2016-2019
Organized on campus self-funded – Markhor Programming Workshop	2018-2018
Actively Participated in Hackathons – Softec Fast Lahore, SEE – PAF Kiet, Karachi	2016-2018



## Published Apps



### AgriFarm, 2020

Smart crop doctor



### Snorlux, 2020

Sleep tracking android app



### BUIITEMS, 2019

Lite CMS Campus Solution app



## Open Source



### Stack Overflow

mirwise-khan

~327k people reached



### Github

mirwisek

Arctic Code Vault Contributor



## Languages

C/C++

1 year

Java

7 years

Kotlin

2 years

Python

3 years

JavaScript

4 years

Php

3 years

SQL

5 years

HTML

3 years

CSS

3 years

## Past Experience

### Natural Language Processing Engineer

Aug 2019 – Sep 2019

#### Applied Research – BUIITEMS (Volunteer)

- Helped instructor in engineering aspects of an NLP research by extracting multilingual structured data(tweets) and applying NLP methods to perform sentiment analysis & gain other consumer insights.
- Improved various techniques to reduce data collection of more than 70,000 tweets.
- Decreased model training time up to 43% by preprocessing tweet's features and encoding them in sparse matrices.

### Software Engineer – Team Lead

Mar 2018 – Apr 2020

#### AgriFarm Android App – Final Year Project

- Built crop disease classifier using image processing and machine learning techniques.
- Migrated from Keras to TensorFlow v1.4 and afterwards to v2.0.
- Designed schemas and coordinated with team to formulate database migration procedures.
- Developed RestAPI using NodeJS that collects distributed RSS news feeds into central source.
- Built android app with MVVM architecture and android architecture components.
- Deployed classifier model on Google Cloud AI Predictions Platform.
- Used research methodologies to investigate results of CNN, AlexNet, VGG19 and MobileNet models.
- Migrated from online classifier to on-device(offline) model.
- Managed effectively a team of 4 members and introduced them to productive tools such as Jira, Slack, Facebook Organizations and Git Version Control (GitHub).

### Software Engineer – Team Lead

Jun 2018 – Dec 2020

#### BUIITEMS Campus Lite App – BUIITEMS

- Built an android app – a specialized, lite campus solution for students and staff.
- Utilized web scrapping techniques (Selenium) to collect student results from campus website.
- Coordinated with university faculty staff and designed a specific timetable designer with JavaFX and Java Spring Boot that would publish the timetable directly connected with android app.
- Developed messaging system with Restful Socket API using NodeJS and SocketIO with notifications powered by Firebase Cloud Messaging.
- Migrated the app from Firebase Firestore to Linux server environment with MySQL and NodeJS.
- Managed version control in Atlassian BitBucket.

### Natural Language Processing Engineer

Aug 2019 – Sep 2019

#### Sentiment Analysis of Movie Reviews

- Using data scrapping tools extracted movie reviews from Google Search Engine.
- Performed post-processing to remove short and ambivalent reviews.
- Built a user interface with Java Swing for user interaction.
- Rated each review after sentiment analysis and calculated average rating score for the movie.

## Skills Assessment

Command on skill based on years of past experience, shown as percentage 0-100%

