

# ALEX MATHEW

SOFTWARE DEVELOPER



## EXPERIENCE

May'20  
|  
Aug'20

### Google Summer of Code Student Developer

PyGeoAPI, OSGeo

📍 Remote

- Updated OGC Features API Interface (OpenAPI Specification Document) to include transactions
- Implemented the updated OpenAPI Specification Document by adding transactional support in PyGeoAPI

Aug'16  
|  
Aug'18

### Software Engineer

Oracle HCM Cloud Team, QBurst

📍 Cochin, India

- Worked as an Oracle HCM Cloud Functional Consultant for implementation and production support
- Worked as a Java/Javascript Developer to build internal software tools to work with Oracle HCM Cloud



## SELECTED PROJECTS

Jul'20  
|  
Jul'21

### Data Driven Mineral Prospectivity Modelling from Magnetic Anomalies

CSRE, IIT Bombay

- Linear anomalies were extracted from the magnetic map using a fully convolutional encoder-decoder network
- Predictor maps were obtained by thresholding lineament distance and density maps using studentized contrast
- Built a simple logistic regression model using predictor maps to predict prospectivity with a F1 score of 0.9

Mar'20  
|  
May'20

### FaceAuth Web Service

CSRE, IIT Bombay

- Implemented Haar Cascades for face detection, Kernel PCA for feature extraction, and SVM for classification
- Polynomial kernel in KPCA and linear kernel in SVM produced the highest accuracy of 97.3% with first two PCs
- Deployed as a RESTful flask web service that can be used to perform user authentication in any application

Aug'20  
|  
Dec'20

### Chatbot Engine

CSRE, IIT Bombay

- Implemented a Seq2Seq conversational model and trained it with Cornell Movie-Dialogs Corpus
- Employed bidirectional GRU with Loung Attention mechanism and Greedy search decoding module

Sep'19  
|  
Nov'19

### Denoising Multispectral Satellite Images

CSRE, IIT Bombay

- Built a python desktop app to remove grainy salt-and-pepper speckle noise from multispectral satellite images
- Applied Principal Component Analysis on Landsat-7 image to identify uncorrelated noise components
- Reconstructed the image with the first three PCs which corresponded to 98% of the Explained Variance

Sep'19  
|  
Nov'19

### Real-time Visualization of IoT data stream in Web Map

CSRE, IIT Bombay

- Hosted a real-time web map with routing capability in Firebase for monitoring garbage bins in the IITB campus
- Created a sensor unit by interfacing NodeMCU board with HC-SR04 ultrasonic range-finding sensor
- Sensor unit pushes the current state into a Firebase Real-time DB which is then updated in the web map

Jul'17  
|  
Sep'17

### DoQ Integrator

QBurst

- Built a java desktop app to automate bulk loading of employee personal documents into Oracle HCM Cloud
- Implemented a parser to read and process an excel sheet containing employee info and document paths
- Processed data is fed into the Oracle HCM Cloud instance via the HDL Data Loader API



## EDUCATION

Jul'19  
|  
Jul'21

### M.Tech in Geoinformatics

Indian Institute of Technology Bombay

📍 Mumbai, India

Aug'12  
|  
Apr'16

### B.Tech in Computer Science and Engineering

Government Model Engineering College

📍 Cochin, India

## PORTFOLIO

🌐 alex-mathew.github.io

🐙 github.com/alex-mathew

## CONTACT INFO

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## PROGRAMMING LANGUAGES

Java

C

Golang

## SCRIPTING LANGUAGES

Python

Javascript

Bash

## FRAMEWORKS

Electron

Flask

Keras

Arduino

## DBMS

MySQL

SQLite

## TOOLS

Git

Docker

Postman

Firebase