

KARTHIK RAMESH

EDUCATION

Stanford University

Sep 2019- Apr 2021

**Master of Science in
Environmental Engineering**

Delhi Technological University

Aug 2015- Jun 2019

**Bachelor of Technology in
Environmental Engineering**

SKILLS

Python

MATLAB

R

C, C++

SQL

Machine Learning

Deep Learning

ArcGIS/ArcMaps

Google Earth Engine

QGIS

Surfer

Integrated Water Flow Model

MODFLOW

CONTACT



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EXPERIENCE

Hydrologist & Water Resources Engineer

EKI Water and Environment Inc. (June 2021-present)

- Engineered and improved a groundwater model using MODFLOW to simulate groundwater levels leveraging a range of hydrological and climate datasets.
- Lead a team of 3 engineers to optimize a soil water balance model which calculated crop irrigation demand resulting in a 30% reduction in computational time.
- Modeled urban water supply sources and uncertainties due to climate change for a proposed city of 500,000 residents in California.
- Developed scripts in R/Python to streamline hydraulic/groundwater modeling workflows resulting in a 40% reduction of processing time.
- Conceptualized and developed 50 year climate change scenarios for a city of 350,000 residents to model projected urban water demand and sustainable water use using hydrologic models and python in collaboration with hydrogeologists.
- Designed an innovative decision support tool using R-Shiny to visualize multiple hydrologic model runs and facilitate operational decisions for a water district.
- Quantified and mapped geological hazards to water infrastructure in southern California due to Land Subsidence using MODFLOW, FloPy and GeoPandas.

Climate Modeling Engineer

Rowland Institute at Harvard University (July 2020-September 2020)

- MEER:Reflection: Developed a 2-D model to represent energy transfer in terrestrial and marine eco-systems and simulate surface temperatures.
- Constructed a tool to optimize the geographic placement of solar panels using satellite datasets.

Research Fellow

Global Projects Center, Stanford University (March 2020-April 2021)

- Worked on projects of Digital cities and Disruptive Technology program involving data analytics, market research in urban sustainability, insurance and healthcare .

Co-Founder

Optima Solutions, India (May-Dec 2017)

- Optimized a squad worth \$10 million for a \$65 million franchise in the IPL, the most viewed cricket tournament in the world using a Machine Learning model.

RESEARCH AND PROJECTS

Air Quality forecasting: LSTM and Recurrent Neural Networks

Developed a model to forecast PM2.5 by implementing LSTM recurrent neural networks based on time series pollution data and weather parameters. (Sep - Nov 2020)

Air Quality prediction using Machine Learning

Developed a statistical model to forecast long term and short term air quality variation using data from multiple mobile and static sensors in an urban environment. (Sep - Nov 2020)

Analyzing the correlation between SMAP and in-situ CIMIS datasets:

Analyzed the correlation between SMAP satellite soil moisture dataset and in-situ hydrological parameters from CIMIS datasets and variation with land cover. (Apr - Jun 2020)