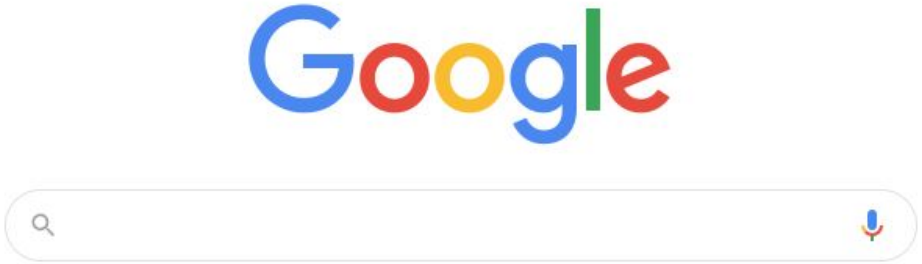
Google Cloud

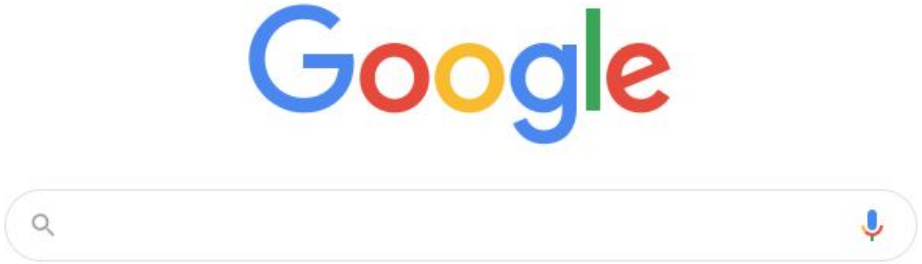
Google AI Modeling Workshop
Vertex AI

Kel Markert
Cloud Geographer

2024-05-30



Our mission is to organize the world's information and make it universally accessible and useful.

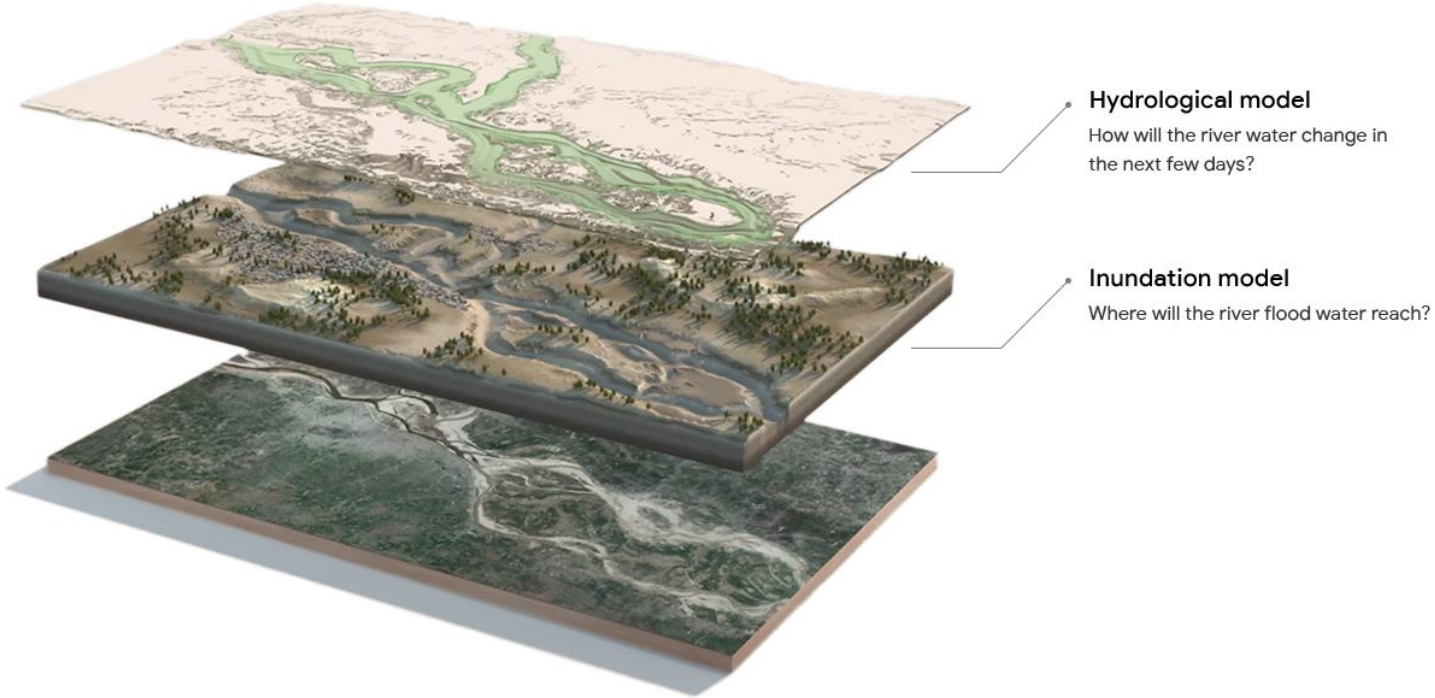


Our mission is to organize the world's information and make it universally accessible and useful.

Includes information about the world itself = hydrology data

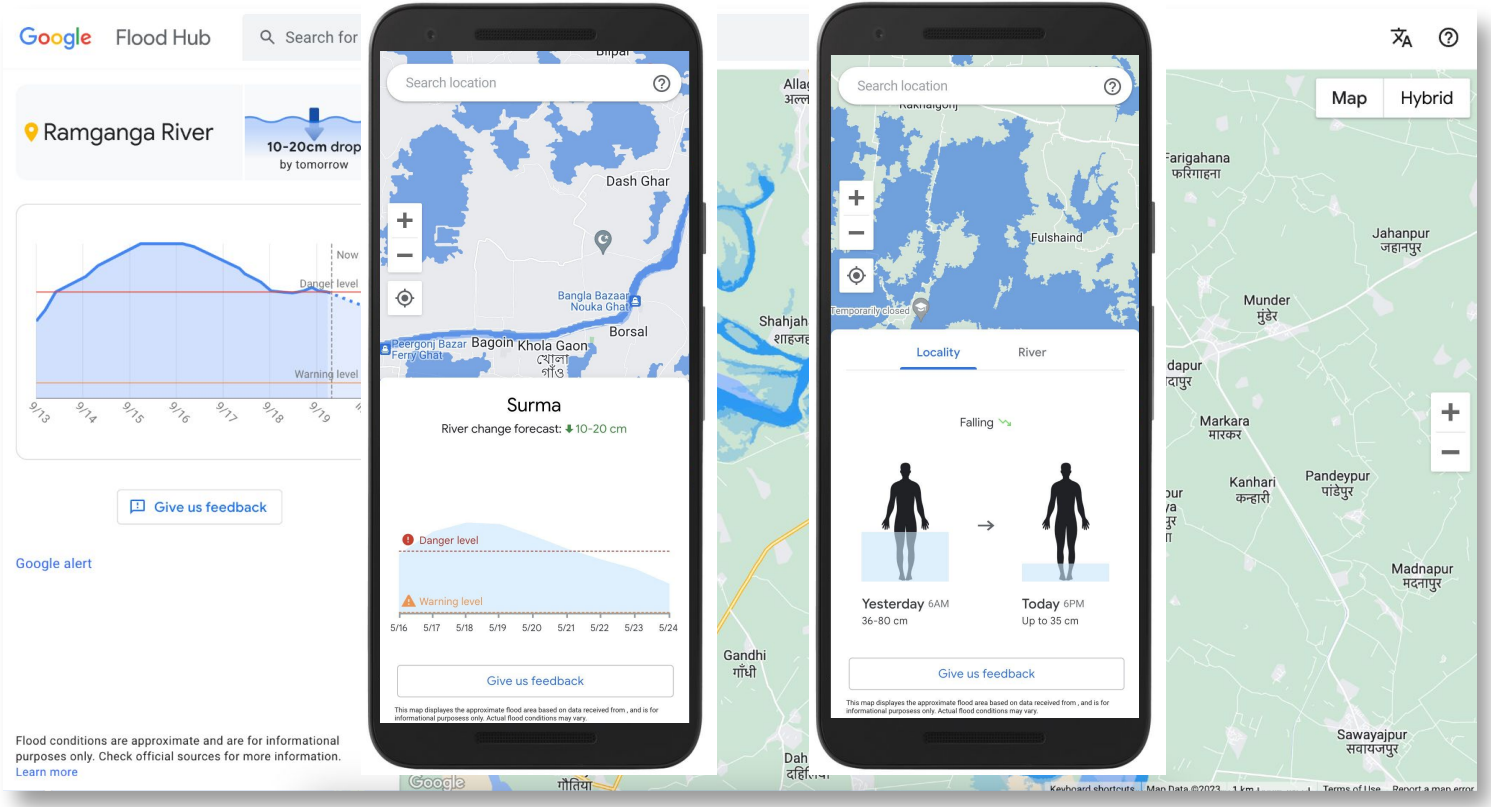
easy and scalable

Google Flood Forecasting in a Nutshell



sites.research.google/floodforecasting/
doi.org/10.1038/s41586-024-07145-1

Google Flood Forecasting



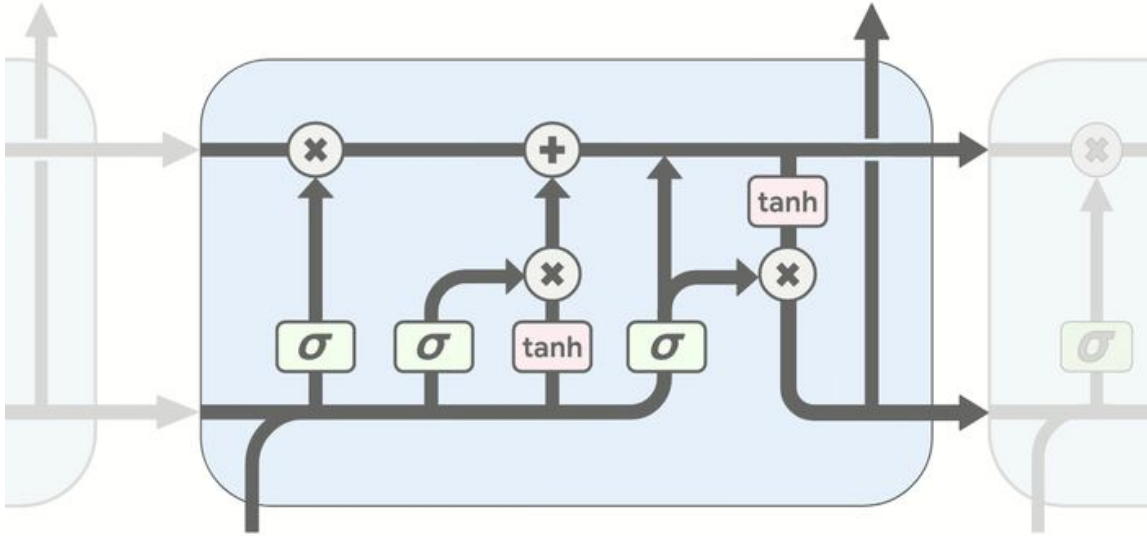
g.co/floodhub

Google Cloud

AI for Flood Forecasting

Almost no explicit modeling

LSTM architecture for time series prediction



AI for Flood Extent

Threshold and Manifold models for transforming gauge height to flood extent

Methods:
https://github.com/google-research/google-research/tree/master/flood_forecasting

NeuralHydrology - A Python library for Deep Learning research in hydrology

doi.org/10.21105/joss.04050
github.com/neuralhydrology/neuralhydrology

Caravan - A global community dataset for large-sample hydrology

doi.org/10.1038/s41597-023-01975-w
github.com/kratzert/caravan

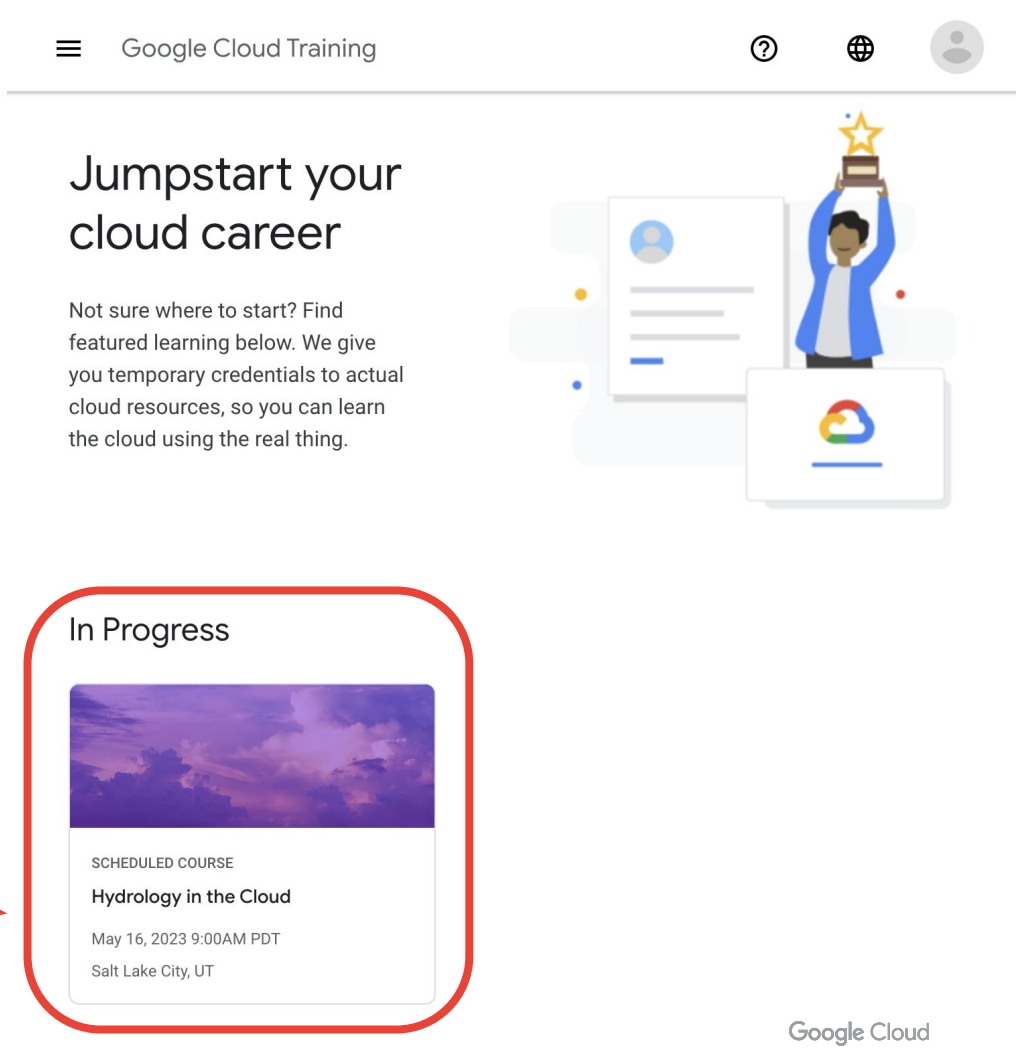
If interested…

Sign up for a qwiklabs account at

https://explore.qwiklabs.com

Use the email you used to sign up for the conference

You should see a course “Hydrology in the Cloud” available



Resources

Github repo for example: github.com/KMarkert/neuralhydrology-on-gcp

VertexAI Documentation: cloud.google.com/vertex-ai/docs

Earth Engine Documentation: developers.google.com/earth-engine/