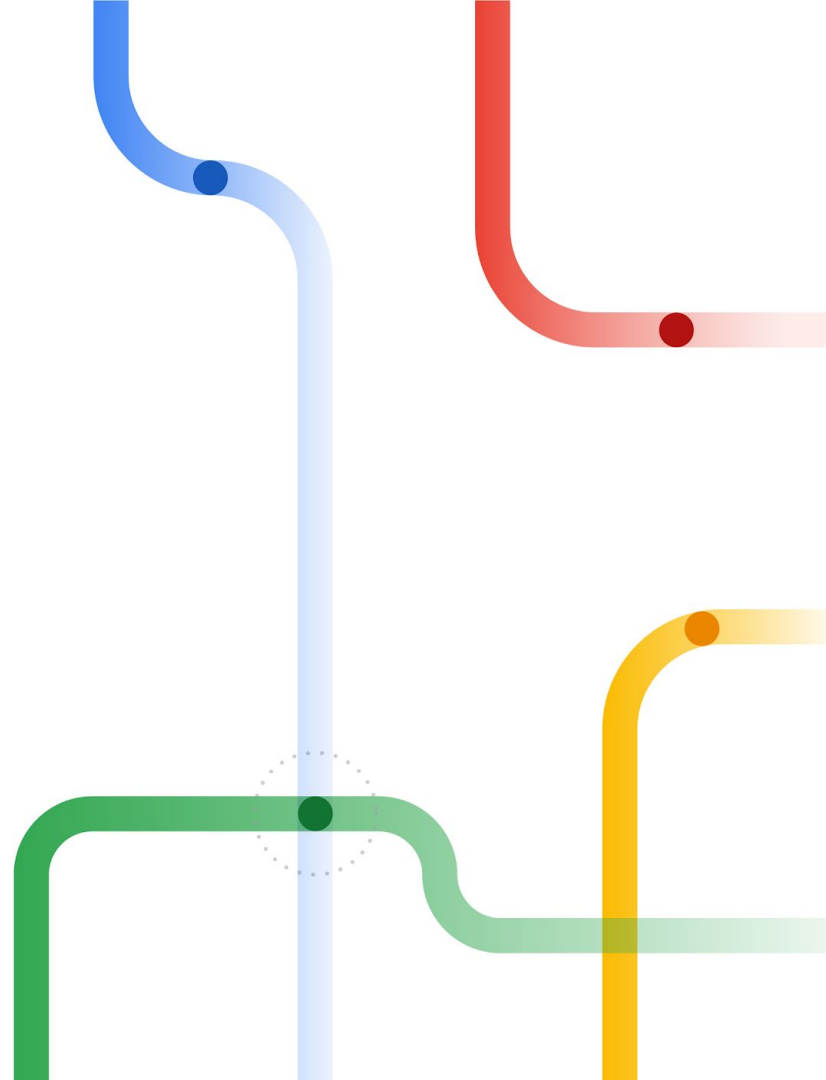


AI for Global Hydrologic Modeling & Inundation Mapping

Martin Gauch
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Google Research



Flood forecasting at Google

Riverine floods



Urban / flash floods

(Coastal floods)

Flood forecasting at Google

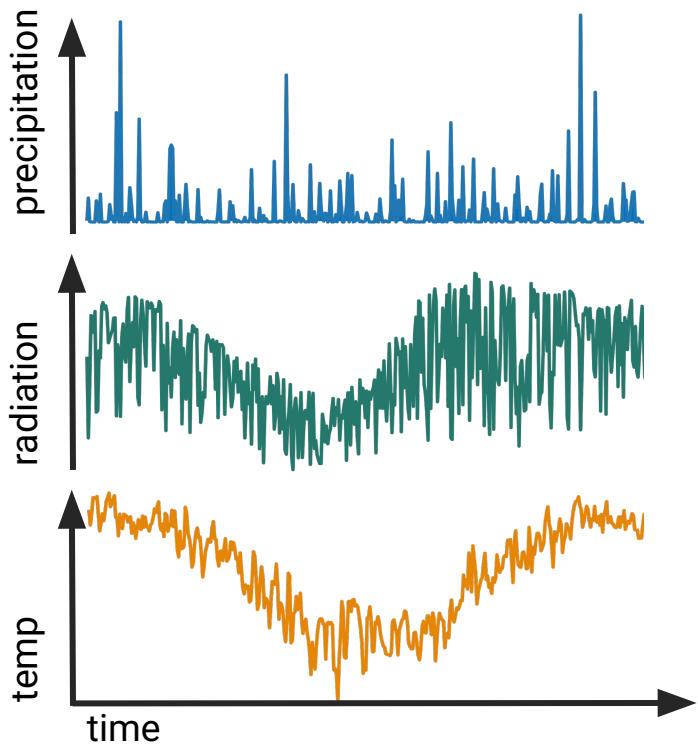
Riverine floods



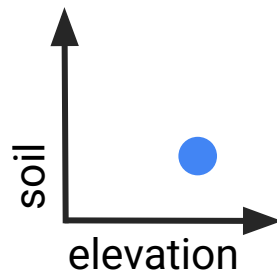
Urban / flash floods

(Coastal floods)

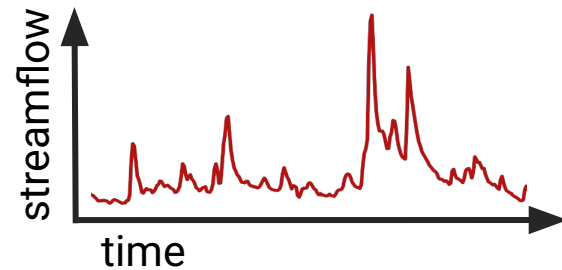
Hydrologic model



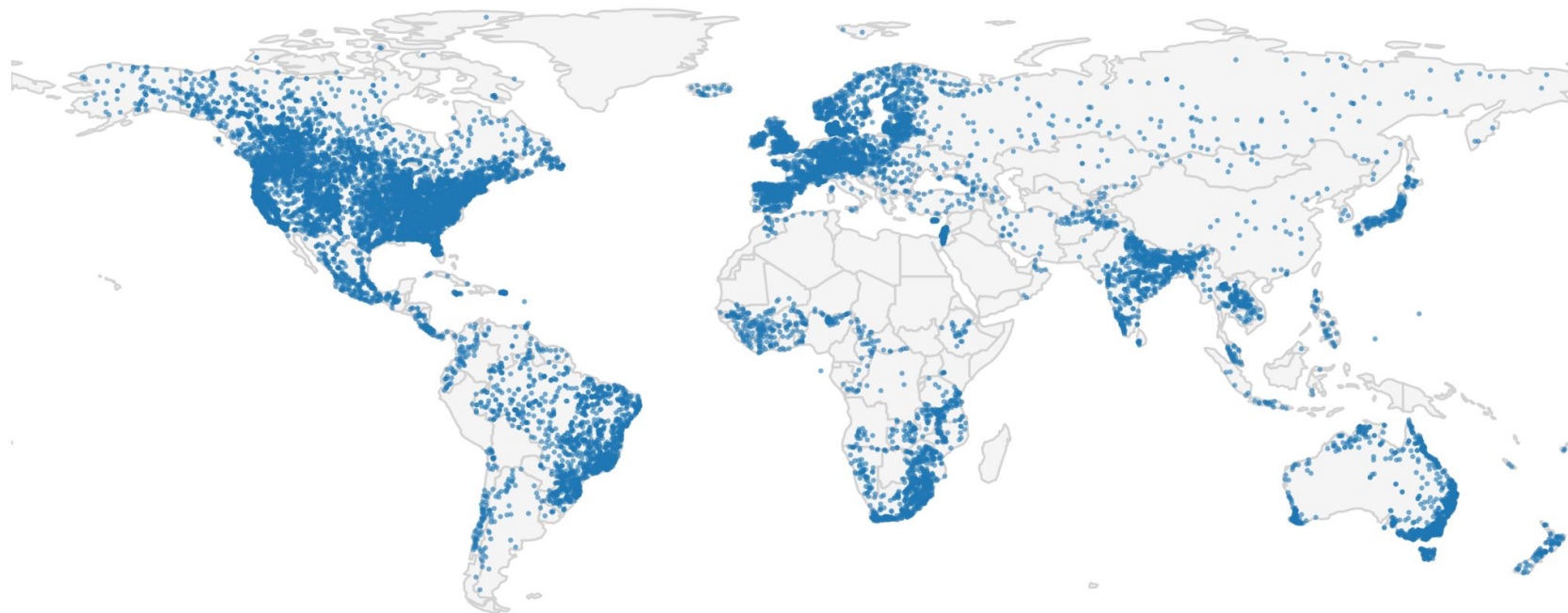
+



→



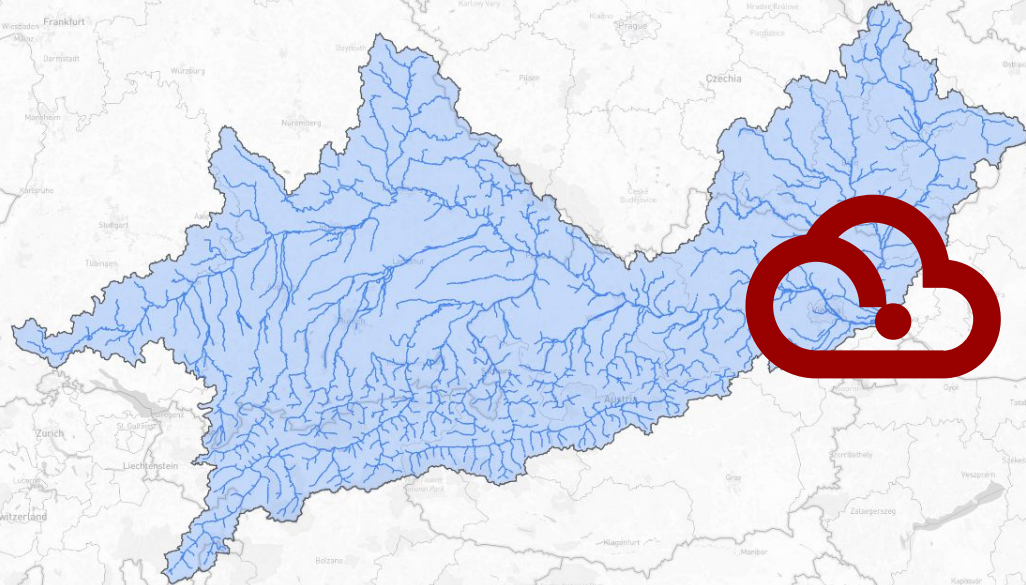
Map of training gauges



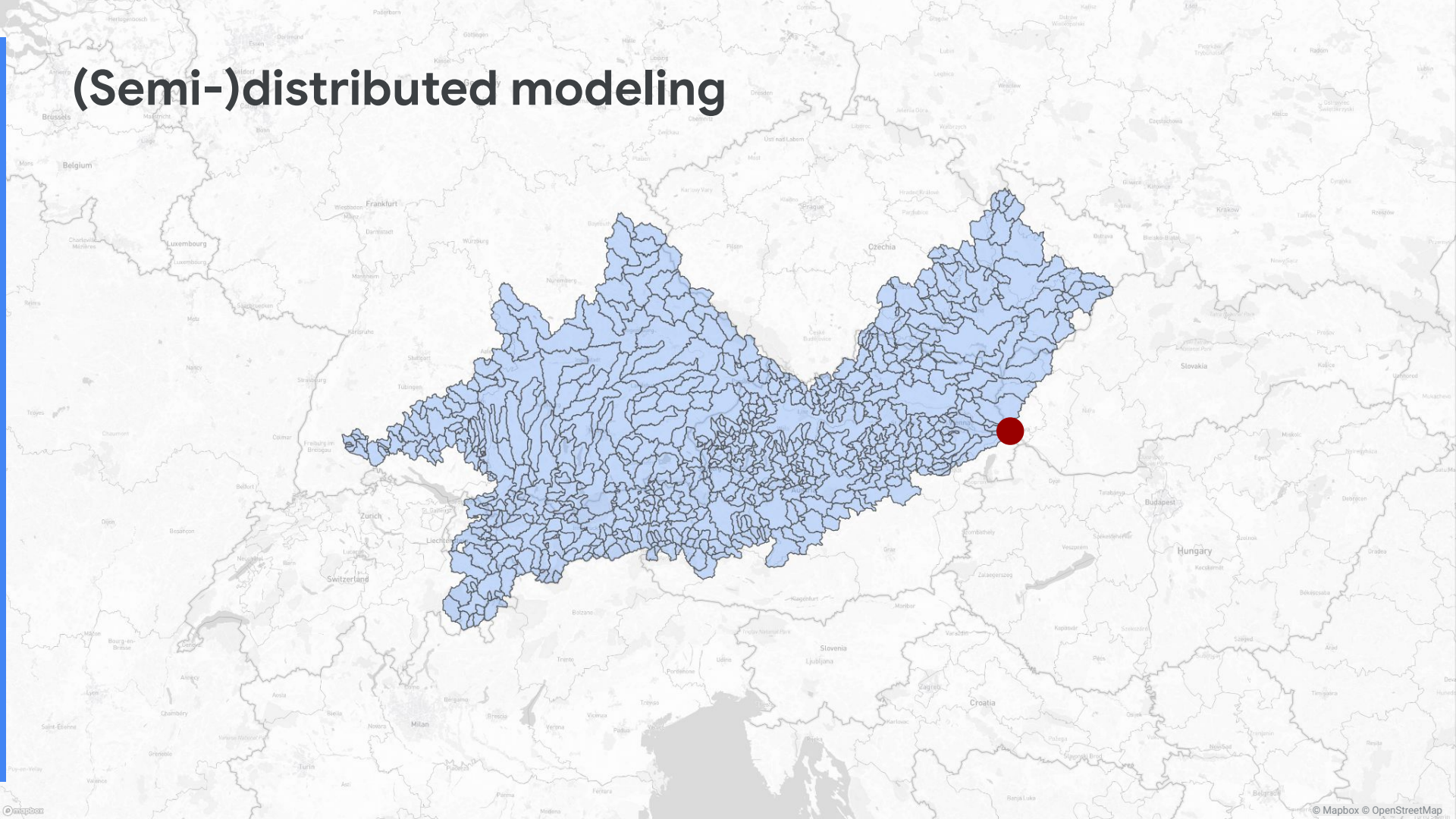
Spatial awareness matters!



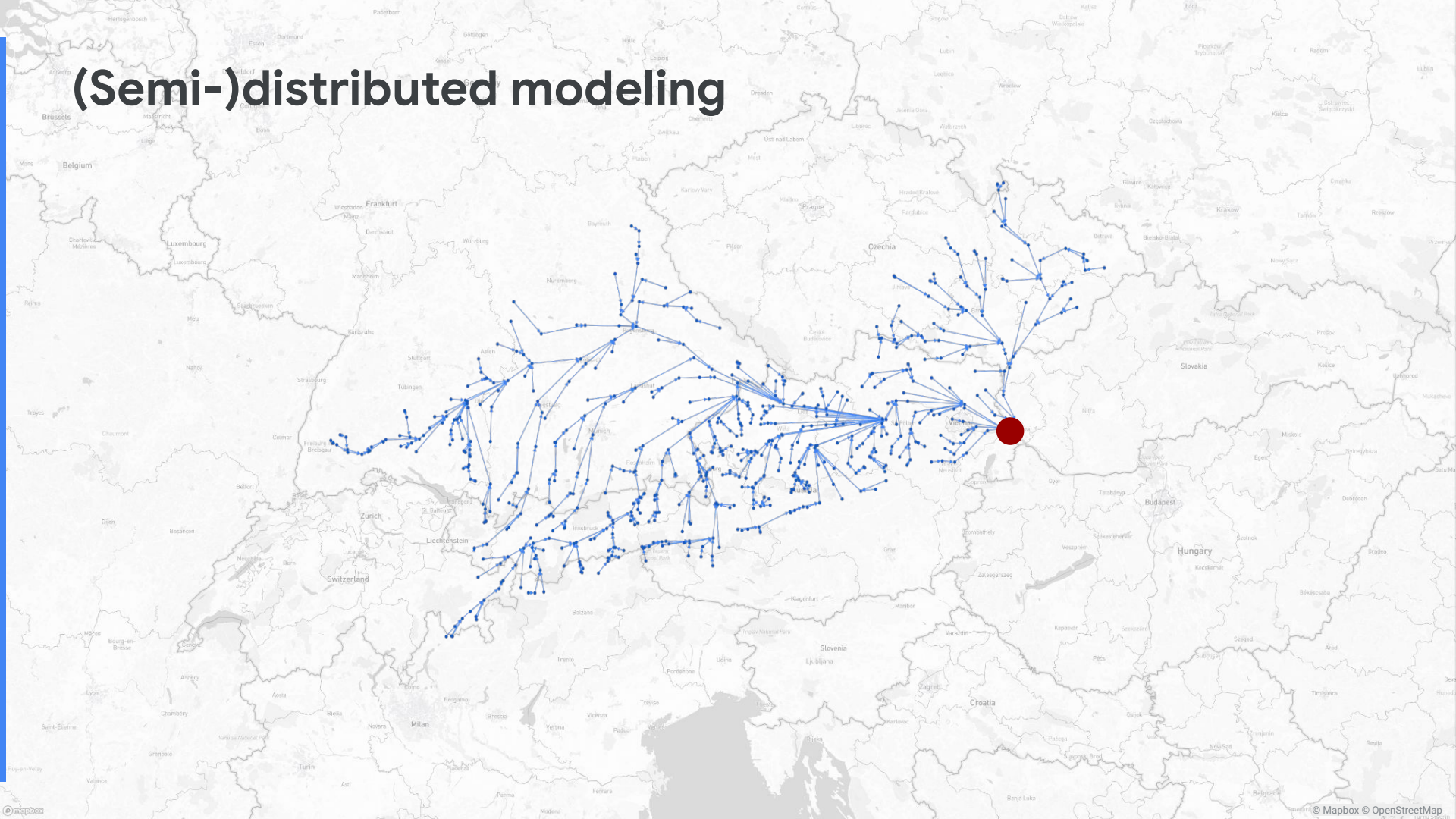
Spatial awareness matters!



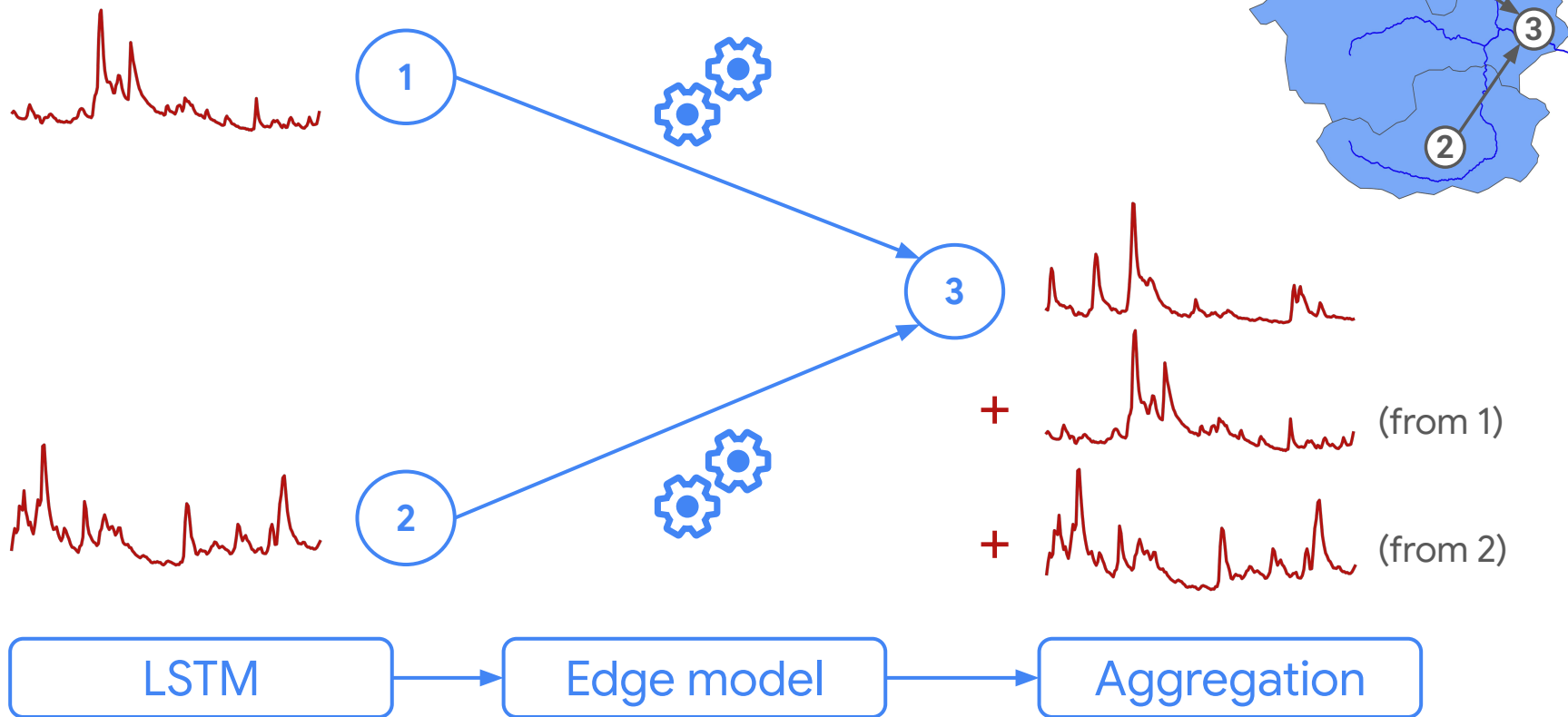
(Semi-)distributed modeling



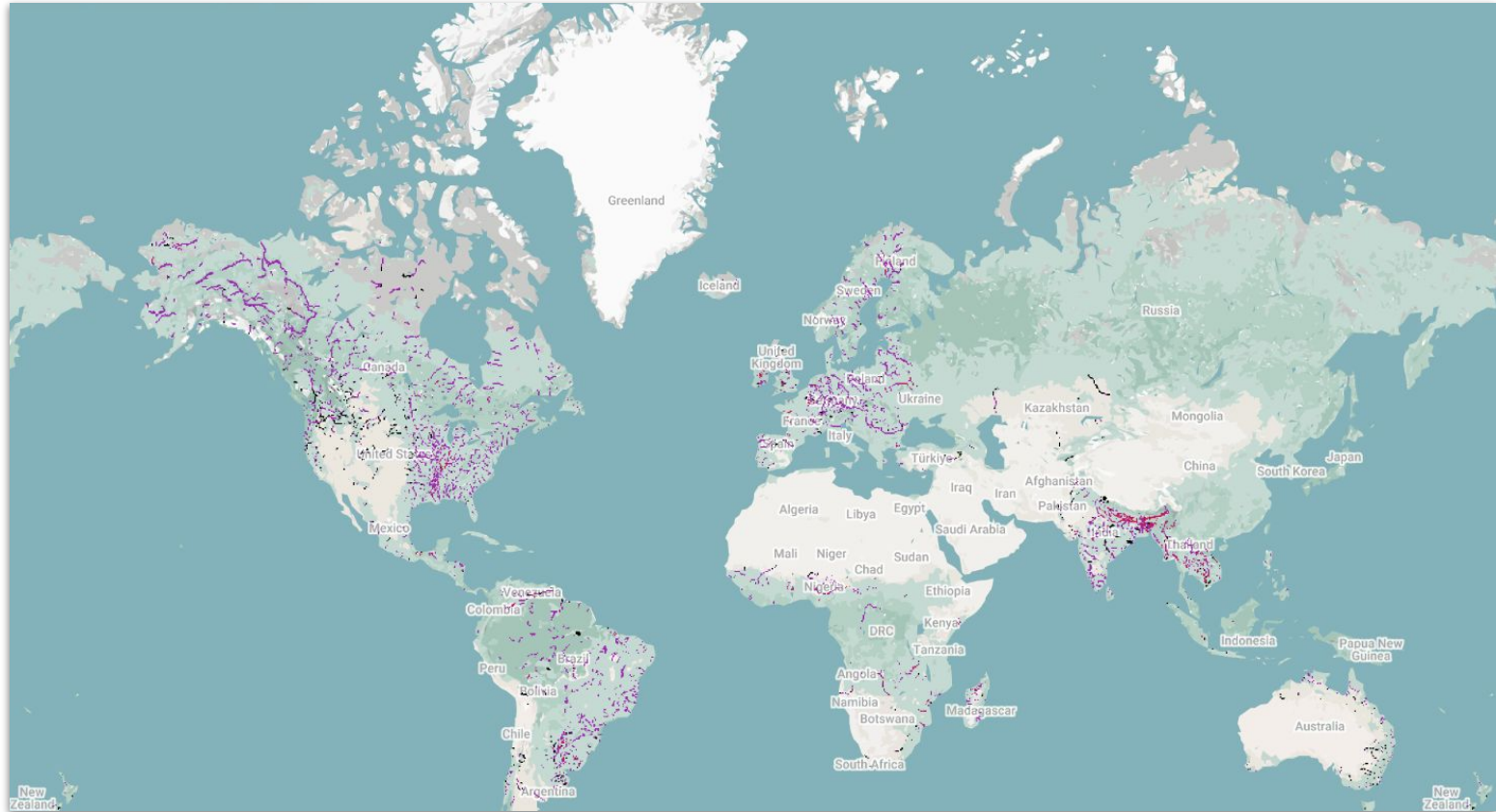
(Semi-)distributed modeling



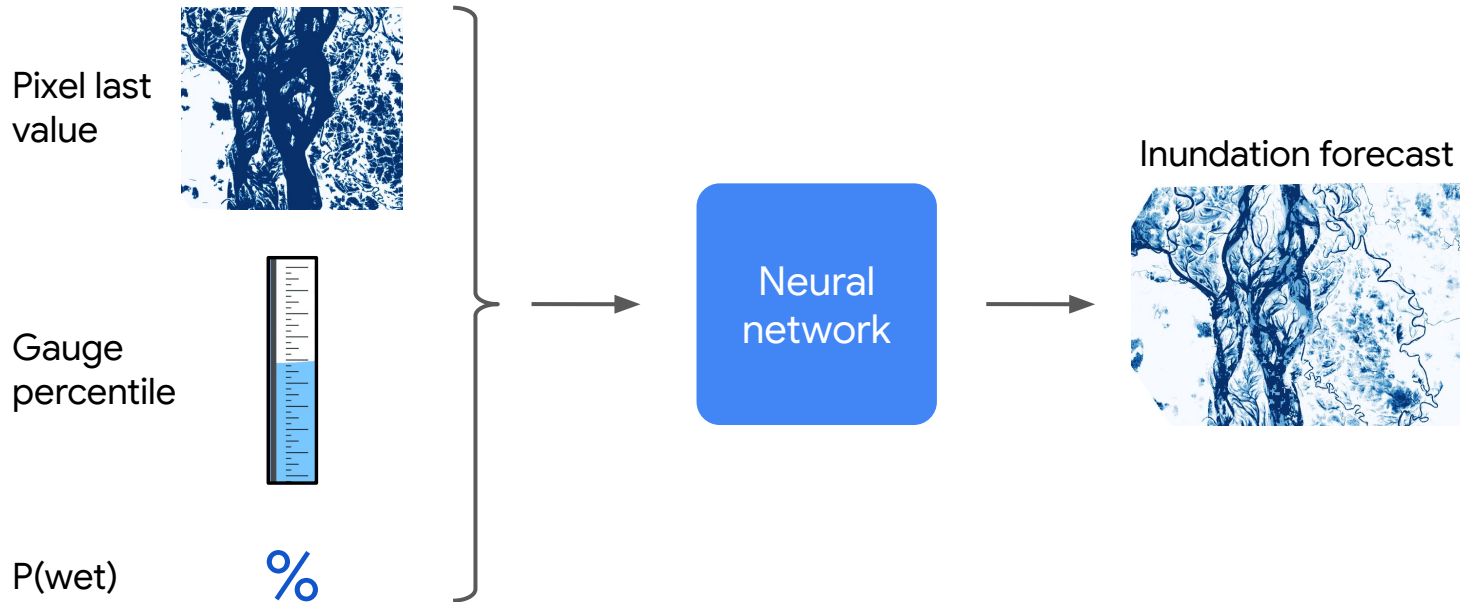
Routing



Inundation models



Google's inundation models today



Flood forecasting at Google

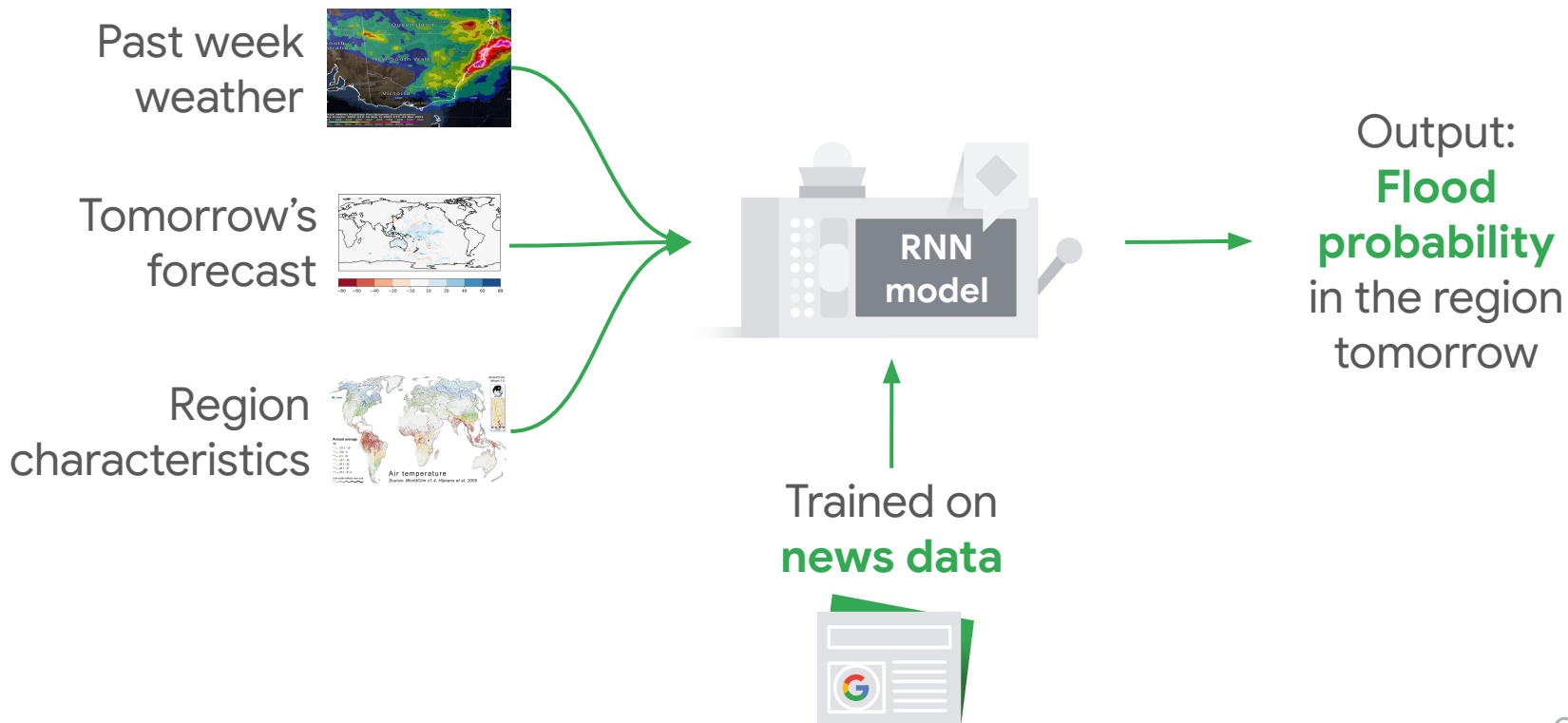
Riverine floods

Urban / flash floods

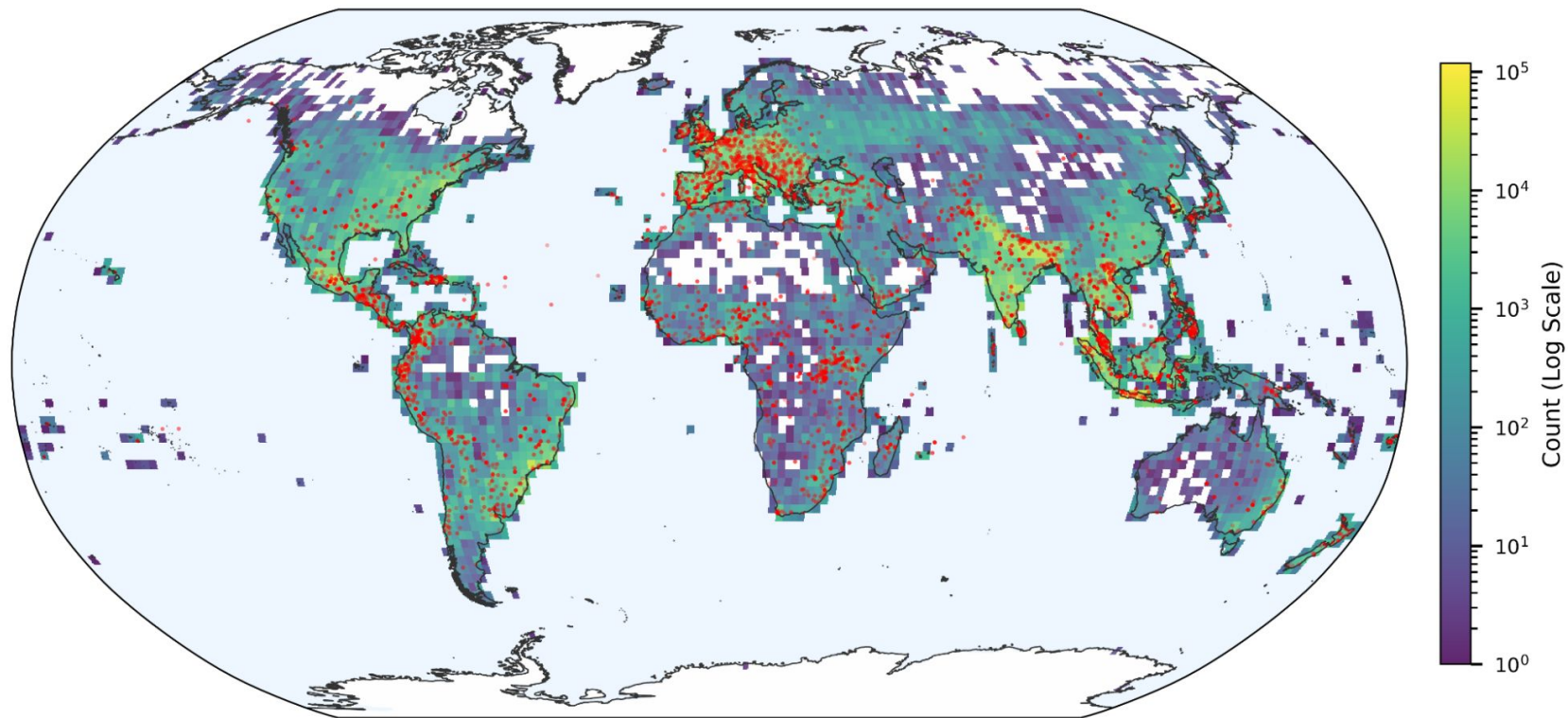
(Coastal floods)



Flash floods



Groundsource



Resources



sites.research.google/floodforecasting

- API
- Reanalysis/reforecast dataset



github.com/google-research/flood-forecasting



github.com/neuralhydrology/neuralhydrology



github.com/kratzert/caravan