Session 2: Edge Computing

Participants:
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Renato:
Description of workflow with overlay, git storage, event triggers, microservices

Nan:
InfluxDB time-series database
What are the interfaces from R?
For interfacing with sensors: telegraf

Cayelan:
Important to expose Rstudio interfaces for the end user
Improvements in visualization are needed

Kohei:
Testbed?
Use cases: cameras in sporting events, crowd detection, missing person in crowd

Cayelan/Paul:
Adaptive sampling - emergent properties, zooming in on events of interest
Can we generate a time-series (synthetic) that captures data sampled at different rates
Trash can in lab generates dataset?

Limnologists are excited about thinking about emergent properties of computer network linked to ecosystem network. Is there a way that the computer network emergent properties could detect emergent properties of lake water quality as an early warning indicator of lake regime shifts?

Needs: limnologists will generate time series that show adaptive sampling of events based on developed triggers of events- the two primary events are 1) increased rate of sampling of certain sensors and 2) new analyses are being run that could trigger new analyses

THEN, we do trash can in lab of temperature sensors as a simple testbed of design once R scripts are written

THEN, we go from back end and generate faux time series using theoretical basis for EWIs and feed into system to see how it responds (synthetic datasets)

Ken:
How to simulate sensors?

Towards testbed:
Distributed Raspberry Pi clusters
VMs near edge
All run Docker
Connected by a virtual network
Experiments with middleware: Kubernetes, OpenWhisk, etc
Emulated sensors