AI Network Challenge

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Overview

- Last telco 26/09/2019
- Pad: https://pad.inria.fr/p/g.D1sMHS8qEcwsc2iq$np_TuYkekVkbtLyVZYr_netaichallenge
- Work items
  - WI1: use case definition
  - WI2: identification of the datasets and/or experimental platforms
  - WI3: challenge publication

Use Case Definition

- 3 propositions
  - Routing
    - Not only prediction but also actions to perform
    - Global routing vs local forwarding (decide output port of packets in switches)
    - Input data to learn on: historical traffic in different conditions.
    - The question behind would be to know if he AI approach can automatically learn what the best routes are based on traffic analysis and so without knowing the failures/anomalies (that are usually reported)
  - Intent (interpretation)
    - In the scope of IBN roadmap, rely on NLP
    - Input data to learn and validate: some text-base intent + their technical realization
    - Issue: how to get a representative number of intents + operations (manually defined as the goal is not to "learn an algorithm")
    - Extend to other stages of the IBN pipeline
  - Traffic prediction
    - Common use case
    - Goal: predict the traffic flows that will occur in a future or the traffic distribution over time
    - Input data: some historical traffic
    - Advantage: easy to understand, datasets could be found
- Any other proposition? In relation with an IETF WG?

Other items

- Platforms
  - Use an existing platform: https://openml.org/ , https://www.kaggle.com/, https://www.aicrowd.com
  - Setup a dedicated platform Acumos: https://www.acumos.org
  - Evaluation purely based on valued prediction outputs (compare prediction to “real labels”)
  - Evaluation based on experimental validation, e.g. simulation
    - Example: train routing on aicrowd : https://www.aicrowd.com/challenges/flatland-challenge
    - Need more effort to develop and maintain the challenge
    - Need also an “infrastructure” to run the challenge (target something lightweight)
- Support from other groups
  - ITU FG-ML5G (can provide use case), also in discussion with aicrowd
  - IEEE Network Intelligence ETI
  - + search for sponsors
- Open questions / comments:
  - Duration of challenge: on-site event only (eventually repeated), multiple-stages (will allows people to warm-up on easir problem and then team-up)
  - What would be the benefit for NMRG?
    - Mapping/assessing types of algorithms regarding the network problem to solve
    - Help in identifying remaining challenge in the area and so a potential roadmap
    - … ?