Thoth

AI/ML for NFV Usecases

6 is the number of Thoth, and Ibis/Beak-of-Ibis is one of the symbols of Thoth - The above symbol captures both.

Introduction

AI has the potential in creating value in terms of enhanced workload availability and improved performance and efficiency for NFV use cases. This work aims to build **machine-Learning models** and **Tools** that can be used by Telcos (typically by the operations team in Telcos). Each of these models aims to solve a single problem within a particular category. For example, the first category we have chosen is Failure prediction, and we aim to create 6 models - failure prediction of VMs. Containers, Nodes, Network-Links, Applications, and middleware services. This project also aims to define a set of **data models** for each of the decision-making problems, that will help both providers and consumers of the data to collaborate.

Presentations

12-November-2021 Updated: 19-November	AboutThoth.pptx
10-July-2021	Thoth-10July2021.pptx

Approach

Decision-Driven Data Analytics.

https://mitsloan.mit.edu/ideas-made-to-matter/decisions-not-data-should-drive-analytics-programs

PTL

Rohit Singh Rathaur

Committers

Sridhar K. N. Rao Sridhar Rao

Key-Info (info.yaml)

```
---
project: 'Thoth'
project_creation_date: '01 June 2021'
project_category: 'Infrastructure' # One of: Deployment, Integration & Testing, Infrastructure
lifecycle_state: 'Incubation' # One of: Incubation, Mature, Integration, Archived
project_lead: &anuket_PROJECTNAME_ptl
    name: 'Rohit Singh Rathaur'
    email: 'rohitrathore.imh55@gmail.com'
    company: 'Birla Institute of Technology, Mesra'
    id: 'TeAmp0is0N' # Linux Foundation ID
    timezone: 'IST ((GMT+5:30)'
primary_contact: *anuket_PROJECTNAME_ptl
issue_tracking:
    type: 'jira'
    url: 'https://jira.anuket.io/projects/thoth'
    key: 'thoth'
mailing_list:
    type: 'groups.io'
    url: 'anuket-tech-discuss@lists.anuket.io'
    tag: 'thoth'
realtime_discussion: # Fields may be blank if no realtime discussions
    type: 'slack'
    server: 'anuketworkspace.slack.com'
    channel: '#thoth'
meetings: # Fields may be blank if no standing meetings
    - type: 'zoom'
      agenda: 'https://wiki.anuket.io/display/HOME/Thoth-Meeting+Minutes' # eg: 'https://wiki.anuket.io/display
/HOME'
      url: 'https://zoom.us/j/96163911066' # eg: 'https://global.gotomeeting.com/join/819733085'
      repeats: 'bi-weekly' # ex: weekly, monthly, bi-weekly
      time: '13:00 UTC' # ex: '16:00 UTC'
repositories:
    - 'thoth' # ex: myproject
committers:
    - name: 'Sridhar K. N. Rao' # repeat all fields for each committer
      email: 'srao@linuxfoundation.org'
      company: 'The Linux Foundation'
      id: 'sridharkn'
tsc:
    # yamllint disable rule:line-length
    approval: 'https://wiki.anuket.io/display/HOME/2021-08-03+TSC+Agenda+and+Minutes' # ex: https://wiki.anuket.
io/display/HOME/2021-01-12+TSC+Agenda+and+Minutes
    changes:
        - type: ''
          link: ''
          # yamllint enable rule:line-length
```

Contributors

1. Rohit Singh Rathaur
2. Kanak Raj
3. Shubhank Saxena
4. Akanksha Singh
5. Jahanvi Ojha

Meeting Details

Topic: AI/ML for NFV
Time: 13:00 Universal Time UTC

Day: Every week on Friday
Zoom Link: https://zoom.us/j/96163911066

Meeting ID: 961 6391 1066
Find your local number: https://zoom.us/u/acEvZCMvjT

Gerrit Details

- Anonymous HTTP: git clone "https://gerrit.opnfv.org/gerrit/thoth"
- Gerrit Repo: https://gerrit.opnfv.org/gerrit/admin/repos/thoth

Contributions

Sl. No.	Contributor	Contribution	Duration	Certificate of Appreciation OR Contribution
1	Girish L	Survey of: 1. Existing works on AI/ML in Networking - works related to NFV - problems, ML-Techniques, Data, etc. 2. NFV Problems - Event Correlation, VNF Placement, Anomaly Detection, VNF Failure Prediction, and Synthetic Data Generation. 3. OSS Projects for AI/ML that can be (re)used	1 Month	ML-Networking-Telcos Survey