Enterprise Neurosystem: Activity Report 4

United Nations

We've recently met with members of the United Nations Climate Technology Centre and Network initiative, including a representative of the US State Department. We delivered our community overview, and the UN representatives expressed a high degree of interest in our community's direction and architectural approach. There were a variety of engagement areas, and making advanced climate technology available to developing nations is a key focus for the UN - our community's Bee Population Analytics development project was a highlight in that regard. We will establish an ongoing cadence, and collaboratively build a list of projects and infrastructure objectives to help support their efforts.

Argonne National Lab

John Overton arranged an introductory call with Venkat Vishwanath, Data Sciences Team Lead at the Argonne Leadership Computing Facility (ALCF) to discuss the Argonne Lab's participation in the Neurosystem community. We discussed initiatives where the two organizations could work together, including the ALCF AI Testbed, where the Neurosystem community can use supercomputers, visualization clusters, data storage and networking resources free of charge. The Argonne SAGE project (software-defined sensor network initiative) was another area of collaboration, and has a similar charter for climate change. Venkat will introduce us to contacts who manage both initiatives.

He also expressed interest in our development of the EN Self-Describing Asset Catalog and the Secure AI Connectivity Fabric, and felt that Argonne Lab would find both useful. This relationship is in the initial stages of conversation, but could create an interesting partnership for the community - Stanford SLAC is considered the most advanced lab for Edge use cases (AI and massive throughput), and Argonne can be considered the Core data center R&D side of the equation.

https://www.alcf.anl.gov/about/people/venkatram-vishwanath
https://www.anl.gov/
https://www.alcf.anl.gov/alcf-resources
https://www.anl.gov/mcs/sage-a-softwaredefined-sensor-network

Central Intelligence Workstream

- Code development of the Self-Describing Asset Catalog continues, and development leadership has moved from IBM to Red Panda (as project lead Josh Purcell recently accepted a position there). Josh will continue his work on development and support of the catalog code.
- The group agreed to explore the applicability of the catalog to support FAIR (Findable, Accessible, Interoperable, Reusable) for digital assets as the next common activity.

More details about FAIR principles can be found at https://www.go-fair.org/fair-principles/ and https://www.nature.com/articles/sdata201618 .

- An abstract on Self-Describing assets has been accepted for SNC 2020, and was invited for submission as a full paper. The co-authors are working on the paper development through Overleaf.

Secure AI Connectivity Fabric Workstream

- Following Diesnh Verma's presentation (Generative Policy Model For Autonomic Management), his code base is now under discussion for incorporation in the Secure AI Connectivity Fabric.
- We had a planning session with community members Omar Quijano and Ryan Coffee at Stanford SLAC regarding the first SAICF PoC. The objective is to test AI model/application connectivity capability for lab and community use.

Acoustics AI / Bee Population Analytics PoC

- We had a discovery call with Dr. Angelita De La Luz, Pollination Research Lead with Beeflow, to discuss her research on bee populations. Beeflow provides services to farmers in regard to bee populations to improve crop yields and improve the quality of fruits and seeds. They optimize placement of beehives, attraction factors for bees and flowers, and pollination in low temperatures.
- We also had a follow on group call which included Dr. Noah Wilson-Rich, CEO of The Best Bees Company. He discussed their beekeeping service that delivers and supports commercial and residential beehives, and their partnership activity with MIT, NASA and others. Proceeds from his company go to the Urban Beekeeping Laboratory and Bee Sanctuary, a non-profit organization.

www.beeflow.com
www.bestbees.com
www.beesanctuary.org

Telco Vertical Development Track

- The Dell Executive team has joined the community, and will participate in the CI and Telco development tracks. VoltActiveDB and Quanta (CTO) have expressed interest in joining as well, and will be selecting areas for participation.
- We have held a number of meetings to establish a complete strategy for Telco and the Enterprise Neurosystem CI architecture. We have discussed how AI/ML and telco architectures will interoperate, and RAN and Core alignment with the EN CI platform.
- We have also discussed the latest work underway at O-RAN, and how we could support that community's objectives.
- In addition, Ravi has engaged the global 6G academic and business community to create deeper ties with the EN. He will invite the CTO of China Mobile to the EN community,

and will be arranging an introductory meeting with the board. He also has a number of other firms in the recruitment pipeline, including Radisys, Airspan and others.

- Ravi is securing an article in 5G Magazine to drive awareness of the Enterprise Neurosystem, and this will include interviews with various members of the community.

Architecture Slides

A few high level architecture slides were used for the UN presentation - please find them enclosed. The two Concept Summary slides describe the enterprise and climate use cases, to highlight the interoperability of our platform with different AI models & requirements. We will move these into GitHub in the next few days for common access, along with a new summary deck.

Governance

Audrey Reznik and Lisa Caywood have been working on establishing a unified presence on the web via GitHub and the .org website, which is now under construction by Tuomas Kuosmanen and Marc Dequenes, who are kindly volunteering their spare time to help us. We plan to have the website ready for viewing and the central GitHub landing page complete in June.

Audrey also conducted an audit of the GitHub site, and although some information and code is in place, we will need the workstream owners to complete the process. She provided the following update:

AI Governance Stage 1 Compliance, for our GitHub repos:

- Audrey found, for the repos she checked, that some details are missing, and we still need to include all of the following items. We will address this in the coming weeks:

  - Meeting times/days.
  - Main contact email.
  - List of related participants.
  - Project description.

- Lisa will provide Audrey with a list of participants (repo owners). Audrey will contact the repo owners individually to let them know what they are missing to obtain stage 1 compliance.
- Audrey will also double check that we don't have any repos that are not being used and should be archived - e.g. Dec 2021.

Code of Conduct & Complaint Process:

- Lisa would like to have this written up and accessible to all members. Lisa will contact Marie Nordan to get an example that we can use as a baseline.

- Lisa has asked for volunteers to discuss how we will compose the review committee for the Code of Conduct & Complaint Process. Helpers in this regard are Audrey Reznik and Erik Erlandson.