

# 45<sup>th</sup> NMRG Meeting - IETF 100

## Session 2

Laurent Ciavaglia, Lisandro Z. Granville



# IRTF follows IETF Note Well

Any submission to the IETF intended by the Contributor for publication as all or part of an IETF Internet-Draft or RFC and any statement made within the context of an IETF activity is considered an "IETF Contribution". Such statements include oral statements in IETF sessions, as well as written and electronic communications made at any time or place, which are addressed to:

- The IETF plenary session
- The IESG, or any member thereof on behalf of the IESG
- Any IETF mailing list, including the IETF list itself, any working group or design team list, or any other list functioning under IETF auspices
- Any IETF working group or portion thereof
- Any Birds of a Feather (BOF) session
- The IAB or any member thereof on behalf of the IAB
- The RFC Editor or the Internet-Drafts function

All IETF Contributions are subject to the rules of [RFC 5378](#) and [RFC 8179](#).

Statements made outside of an IETF session, mailing list or other function, that are clearly not intended to be input to an IETF activity, group or function, are not IETF Contributions in the context of this notice. Please consult [RFC 5378](#) and [RFC 8179](#) for details.

A participant in any IETF activity is deemed to accept all IETF rules of process, as documented in Best Current Practices RFCs and IESG Statements.

A participant in any IETF activity acknowledges that written, audio and video records of meetings may be made and may be available to the public.

# Useful links

## Agenda

<https://datatracker.ietf.org/doc/agenda-98-nmrg>

## Materials

<https://datatracker.ietf.org/meeting/100/session/nmrg>

## Remote participation (Meetecho)

<http://www.meetecho.com/ietf100/nmrg>

# Volunteers ?!

Minutes taker(s)

Meetecho / Jabber scribe

## **Special session**

Use of Artificial Intelligence (AI) for Network Management

# Agenda

Session 2 - Tuesday, November 14th, 9:30 - 12:00

## 2.a) Scope and Objectives (5 min.)

presenters: NMRG chairs

## 2.b) Use cases and research results (~70 min.)

**A deep-reinforcement learning approach for software-defined networking routing optimization** (10 min.)

presenter: Albert Cabellos

**Use of CVAE for Network QoS Management** (10 min.)

presenter: Shen Yan

**Network traffic analysis for encrypted traffic and security monitoring** (10 min.)

presenter: Jérôme François

**Model-free Resource Management of Cloud-based applications using Reinforcement Learning** (10 min.)

presenter: Armen Aghasaryan

**The CogNet Report. Addressing data-enabled network management** (10 min.)

presenter: Diego Lopez

**Q&A and discussion** (20 min.)

# Agenda

Session 2 - Tuesday, November 14th, 9:30 - 12:00

2.c) Emerging landscape of AI in Networks (~50 min.)

**IEEE ComSoc ETC on Network Intelligence** (10 min.)

presenter: Laurent Ciavaglia

**ETSI ISG Experiential Network Intelligence (ENI)** (10 min.)

presenter: Will Liu

**IETF/IRTF Intelligence Driven Networks** (10 min.)

presenter: Sheng Jiang

**Q&A and discussion** (20 min.)

2.d) Discussion, conclusions and way forward (~20 minutes)

**What have we learned? What's important for the next steps?**

- Research items
- Standardization path(s)

**How do we structure the work to be done**

- Collective roadmap, work plan, deliverables

# Scope and Objective

- AI for network management is not a new topic per se
  - The literature in the area shows that
- On the other hand, AI has matured a lot, finding applications in several areas
- People interested in the subject also formed communities that can contribute
  - Call for contributions sent to various mailing lists
- "Revisiting" AI for network management is not only appropriate but also timely



# Use cases and research results

Presentations and Discussion

# Emerging landscape of AI in Networks

Presentations and Discussion

Discussion, conclusions and way forward

## **What have we learned? What's important for the next steps?**

- Research items
- Standardization path(s)

## **How do we structure the work to be done**

- Collective roadmap, work plan, deliverables