



# New IP and Beyond Workshop

Organized by ICNP

Sunday, 30 October 2022

Lexington, KY

# Welcome Message from NIB'22 Chairs

- New IP and Beyond Workshop is organized to share research in evolution of fixed-network protocols to complement and support 5G, B5G, and 6G technologies.
- We are delighted to meet in-person and hope to have a stimulating discussion.



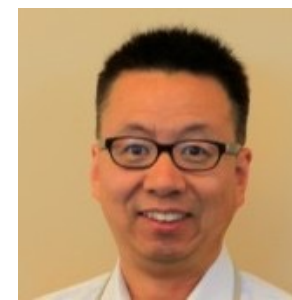
Prof. Filip De Turk  
Ghent University



Kiran Makhijani  
Futurewei, USA



Dr. Stuart Clayman  
University College of London



Dr. Richard Li  
Futurewei Technologies, USA



Prof. Stefano Salsano  
University of Rome Tor Vergata

**NIB'22 General Co-Chairs**

**NIB'22 PC Co-Chairs**

# Special Thanks to the TPC members

- **Alex Afanasyev**, Florida International University, USA
  - **Osamah Lutf Hamood Barakat**, Siemens, Germany
  - **Albert Cabellos-Aparicio**, Universitat Politècnica de Catalunya, Spain
  - **Lijun Dong**, Futurewei Tech, USA
  - **Halima Elbiaze**, Université du Québec à Montréal, Montreal, Canada
  - **Jiang Liu**, Beijing University of Posts and Telecommunications, Beijing
  - **Hanan Lutfiyya**, The University of Western Ontario, CA
  - **K. K. Ramakrishnan**, University of California, River Side, USA
  - **Muge Sayit**, Ege University, Turkey
  - **Nirmala Shenoy**, Rochester Institute of Technology, USA
  - **Xiang Sun**, University of New Mexico, USA
  - **Mohit P. Tahiliani**, National Institute of Tech Karnataka, India
  - **Faisal Tooba**, King's College London, UK
  - **Maria Torres Vega**, Ghent University, Belgium
  - **Tim Wauters**, Ghent University, Belgium
  - **Tongyang Xu**, University College London, UK
  - **Yong Liu**, New York University, USA
  - **Roch Glitho**, Concordia University, USA
- On an average TPC members reviewed 2 to 3 papers.
  - There were 10 paper submissions out of which 7 were accepted due to identical scoring

# NIB'22 Workshop Agenda

	Session	Topic of Interest	Session chair
9:30	Keynote	A Variegated Study of 5G Services: Challenges, Opportunities, and Application Innovations.	Kiran Makhijani
10:45	4 Paper presentations	New In-Network services (1 in-person, 3-remote)	Nirmala Shenoy
13:30	3 Paper presentations	New Routing paradigms (1 remote, 2 in-person)	Ike Kunze
15:15	Panel	Way Forward to 5G/6G: What is missing in Network Protocols and Technologies?	Alvaro Retana

For details, please go to: <http://newip-and-beyond.net/program.html>

# Panel Discussion on non-radio aspects of 5G/6G Networks

## Way Forward to 5G/6G: What is missing in Network Protocols and Technologies?

---

Ken Calvert, UK, KY, USA



Nirmala Shenoy, RIT, NY, USA



Marina Thottan, Amazon, USA (remote)



Richard Li, Futurewei, CA, USA



Alvaro Retana, Futurewei, USA,  
(Moderator)

In this panel topic, we hear firsthand from the industry and academic experts on where we are with respect to 5G and 6G adoption? What has happened in other areas of network technologies, besides radio side of things – such as network protocols and mobile backhails.

# A Variegated Study of 5G Services: Challenges, Opportunities, and Application Innovations

Professor Feng Qian (University of Minnesota, USA)



*Bio: Prof. Qian's research interests include mobile systems, AR/VR, mobile networking, wearable computing, and real-world system measurements. He received his Ph.D. from EECS at the University of Michigan in 2012. He was honored to receive several awards, including the AT&T Key Contributor Award (2014), NSF CRII Award (2016), Google Faculty Award (2016), ACM CoNEXT Best Paper Award (2016,2018), AT&T VURI Award (2017), NSF CAREER Award (2018), Trustees Teaching Award (2018), DASH-IF Excellence Award (2019), Cisco Research Award (2021), and ACM SIGCOMM Best Student Paper Award (2021), AI 2000 Top-100 Scholar in Networking (2022), and Google Research Scholar Award (2022). Some of his research prototypes such as mobile Application Resource Optimizer (ARO), have been commercialized and are widely used in academia and industry.*

## About the Talk:

This talk is about studies and learnings from commercial deployments of 5G in Minneapolis, USA. Prof Qian's team has experimented with more than 100 TB of 5G data and traveled more than 8,000 km for drive tests. Their studies revealed a complete landscape of 5G across several key dimensions – network performance, power characteristics, mobility management, and application quality-of-experience (QoE), to name a few, with their critical tradeoffs quantitatively revealed.