

# ARISTIDE TANYI-JONG AKEM

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## SUMMARY

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PhD student with skills in P4 programming, data analytics, machine learning and mobile networks. Interested in research topics at the interface between data science and mobile networking. Currently working on implementing machine learning models in P4-programmable switches for data-driven management of networks, with recent results presented at top networking conferences like IEEE INFOCOM.

## EDUCATION

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**Universidad Carlos III de Madrid** *March 2021 - Present*  
Doctor of Philosophy (PhD) in Telematics Engineering

**Carnegie Mellon University** *August 2019 - May 2020*  
Master of Science (MS) in Electrical and Computer Engineering

**University of Yaounde I** *September 2013 - July 2018*  
Master of Engineering (MEng) in Telecommunications

## PUBLICATIONS

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**Aristide T-J. Akem**, Beyza Bütün, Michele Gucciardo and Marco Fiore, “**Showcasing In-Switch Machine Learning Inference**,” (Demo) *IEEE NetSoft 2023*. [Paper] (**Best Demo Award**)

Michele Gucciardo, **Aristide T-J. Akem**, Beyza Bütün and Marco Fiore, “**Demonstrating Flow-Level In-Switch Inference**,” (Demo) *IEEE INFOCOM 2023*. [Paper]

Beyza Bütün, **Aristide T-J. Akem**, Michele Gucciardo and Marco Fiore, “**Fast Detection of Cyberattacks on the Metaverse through User-plane Inference**,” *IEEE MetaCom 2023*. [Paper]

**Aristide T-J. Akem**, Michele Gucciardo and Marco Fiore, “**Flowrest: Practical Flow-Level Inference in Programmable Switches with Random Forests**,” *IEEE INFOCOM 2023*. [Paper]

**Aristide T-J. Akem**, Beyza Bütün, Michele Gucciardo, and Marco Fiore, “**Henna: Hierarchical Machine Learning Inference in Programmable Switches**,” *NativeNI '22*. [Paper]

**Aristide T-J. Akem** and Edwin Mugume, “**A Machine Learning Approach to Temporal Traffic-Aware Energy-Efficient Cellular Networks**,” *IEEE UEMCON 2020*. [Paper]

## REVIEWER EXPERIENCE

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- PC member: ACM S3 2023 Workshop, co-located with ACM MOBICOM 2023
- External reviewer: IEEE SECON 2023, IFIP Networking 2023, IEEE VNC 2023, WoWMoM 2022.

## WORK EXPERIENCE

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**University of Cambridge, United Kingdom** *Oct 2022 - Feb 2023 & Sep 2023 - Present*  
*Visiting Student*

Visiting the Computer Science and Technology Department under the supervision of Dr. Ian Wassell.

**Ranplan Wireless, United Kingdom** *Oct 2022 - Feb 2023 & Sep 2023 - Present*  
*Visiting Researcher*

Visiting the company as part of the secondments of the MSCA ITN “BANYAN”.

**Orange Labs, France***March 2023 - August 2023**Visiting Researcher*

Visiting the SMART Orange Innovation team as part of the secondments of the MSCA ITN "BANYAN".

**IMDEA Networks Institute, Spain***March 2021 - Present**Pre-Doctoral Researcher*

Marie Skłodowska-Curie ITN Fellow working on implementing machine learning algorithms in P4-programmable switches for online inference at line rate.

**Carnegie Mellon University Africa, Rwanda***September 2020 - March 2021**Graduate Teaching Assistant*

Served in three graduate courses: Data Inference and Applied Machine Learning, Data Analytics, and Big Data Science. Graded assignments, held office hours with students, and handled course logistics.

**Ministry of ICT and Innovation, Rwanda***May 2020 - August 2020**Data Science Intern*

Data extraction, cleansing, wrangling, visualization, and analysis, using Python, to generate insights that facilitate the decision-making process.

**Huawei Technologies Company Cameroon Limited, Cameroon***January 2019 - July 2019**Intelligent Video Surveillance Engineer*

Was part of the team that installed, configured and commissioned 351 street video surveillance camera sites in the city of Yaounde, under the Safe City Project of the National Police.

**LANGUAGES**

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<b>English</b>	Fluent
<b>French</b>	Fluent
<b>Spanish</b>	Beginner

**TECHNICAL STRENGTHS**

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<b>Network Programming</b>	P4 on BMv2 & Tofino
<b>Data Analytics</b>	Python and MATLAB
<b>Computer languages</b>	Linux, C and Python
<b>Web application tools</b>	HTML5, CSS3, PHP, Python, and WordPress
<b>Database management</b>	MySQL
<b>Signal Processing</b>	MATLAB
<b>Microsoft Office</b>	Word, Excel and PowerPoint

**REFERENCES**

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**Marco Fiore, Ph.D.**

Research Professor, IMDEA Networks Institute,  
Av. Mar Mediterráneo, 22, 28918 Leganés, Madrid, Spain.  
marco.fiore@imdea.org

**Edwin Mugume, Ph.D.**

Instructor, Carnegie Mellon University Africa,  
Kigali Innovation City, BP 6150, Kigali, Rwanda.  
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