



6th CATAI Workshop

Universidad Militar Nueva Granada

Bogotá, May 7-8, 2026

Program

Thursday, May 7

Campus Calle 100, Bogotá (Carrera 11 101-80, Bogotá)

Time		Place and description	
7:30	8:00	Registration and Welcome	
Plenary sessions Aula Máxima			
8:00	8:10	Opening Ceremony Representatives from UMNG and the CATAI Network	
8:10	9:00	Antarctic Science through the lens of engineering: spectral measurements on the Antarctic Peninsula Efrén Darío Acevedo Cárdenas Full Profesor Universidad Industrial de Santander	
9:00	9:20	Mechanisms, strategies, and opportunities for collaboration between France and Colombia Herveline Brousse Attachée de coopération scientifique et universitaire. French Embassy in Colombia	
9:20	9:50	Towards a Computing Continuum: The Convergence of Computational Modelling, AI and Scalable Infrastructures Frederic Le Mouël Full Professor, University of Lyon / INSA Lyon, CITI Lab (INSA/Inria)	
9:50	10:00	Coffee break	
10:00	11:00	Progress of the Bogotá Metro. Technologies and Sustainable Mobility José Leonidas Narvaez Morales General Manager of the Bogotá Metro Company	
Parallel sessions			
Time	Digital Health		Smart Cities
	Auditorium Esteban Jaramillo Session Chair: José Rugeles, UMNG		Auditorium German Arciniegas Session Chair: Edward Guillen, UMNG
11:00	11:20	ID 9: Mobile device-based fall alert module Robinson Jimenez (Military University Nueva Granada); Jose Miguel Bejarano (Military University Nueva Granada)	ID 5: Tool for interactive consultation of applications and characteristics of biodegradable additives at the industrial level Esperanza Rodriguez Carmona (Military University Nueva Granada); Keyner Rodriguez (Military University Nueva Granada)
11:20	11:40	ID 4: Back micromovements identification as a motion sickness indicator during a driving simulation J. Betancur (Manuela Beltrán University); Héctor Miguel Vargas García (Manuela Beltrán University); Juan Gabriel Zarate Becerra (Manuela Beltrán University); Fabian Castro (Military University Nueva Granada)	ID 31: From data governance to data-driven decision-making in smart territories: Developing a conceptual framework Gina Maestre-Gongora (University of Antioquia); Carlos Barrios (Industrial University of Santander)
11:40	12:00	ID 24: Real-time integration of T800 Ultra 2 wearable data into PIRE using FHIR: a pilot technical validation study Juan Barbosa (Military University Nueva Granada); Leonardo Ramirez (Military University Nueva Granada)	ID 29: Federating Urban Parking: A Participatory and Uncertainty-Aware Smart Parking System Gabriela Zambrano (University of the Andes); Frédéric Le Mouël (CITI Lab); Oscar CARRILLO (CITI Lab); Fernando Jiménez (University of the Andes); Harold Castro (University of the Andes)
12:00	12:20	ID 23: Parametrized Computational Simulation of Electroencephalographic (EEG) Microstates as a Foundational Step Toward a Standardized Reference Bank Ferman Casas Osorio (Military University Nueva Granada); Leonardo Juan Ramirez Lopez (Military University Nueva Granada); Alejandra Silva Guiza (Military University Nueva Granada)	ID 13: A Reproducible Methodology for Generating Environmental Acoustic Datasets Edward Guillén (Military University Nueva Granada); Juan Martinez (Military University Nueva Granada); Theophile d'Evry (Saint-Cyr Coëtquidan Military Academy); Nathan Morin (Saint-Cyr Coëtquidan Military Academy)
12:20	12:40	ID 22: Application for the early detection of atrial fibrillation using digital signal processing techniques from photoplethysmography (PPG) data Daniela Beltrán (Military University Nueva Granada); Nancy Olarte (Military University Nueva Granada); Lely Luengas (Francisco José de Caldas District University)	ID 11: Sustainability and resilience in smart city planning Angela Grijalba Castro (Military University Nueva Granada); Leonardo Ramirez (Military University Nueva Granada)
12:40	13:00	ID 20: Assessing Smartwatch Platforms for Raw PPG Acquisition: Challenges and Opportunities for Accessible Atrial Fibrillation Detection Andres Acevedo (District University); Jonathan Torres (District University); Esperanza Camargo (District University)	ID 17: Human-in-the-Loop Carbon-Aware Adaptive Virtual Reality across the Computing Continuum Carlos Barrios-Hernández (UIS); Mahdi Sadat Moosav (ENSAM); Frédéric Le Mouël (INSA-Lyon)
13:00	13:20		ID 19: A Memory-Aware Heterogeneous Framework for Sustainable AI Parallelization Carlos Barrios Hernández (UIS); Luis Alejandro Torres Niño (UIS); Yves Denneulin (LIG)

Sponsors



UNIVERSIDAD MILITAR
NUEVA GRANADA



INSA

INSTITUT NATIONAL
DES SCIENCES
APPLIQUEES
LYON





Friday, May 8

Campus Nueva Granada, Cajicá (Kilometer 2 on the Cajicá-Zipacquirá road, Cajicá)

Time		Place and description	
8:30	9:00	Registration and Welcome	
Plenary sessions Auditorium F			
9:00	9:30	From virtual immersion to empathic VR Frédéric Mérienne Full Professor, Arts et Métiers ParisTech	
9:30	10:20	Licensed-exempt spectrum access and smart cities: an omnipresent enabler Martha Suárez President at DSA - Dynamic Spectrum Alliance	
10:20	10:30	Analytics and the Kangaroo Observatory: An Invitation to Applied Research Projects José Tiberio HernandezKangaroo Foundation / University of los Andes. Bogotá - Colombia	
10:30	10:40	Coffee break	
Parallel sessions			
Time		Network Infrastructure Scale Up 205 Session Chair: José Rugeles, UMNG	Applied AI Scale Up 206 Session Chair: Edward Guillen, UMNG
10:40	11:00	ID 15: Comparative Performance Evaluation of Honeypots for Intrusion Detection in a Controlled Network Environment Luis Diaz Perez (Military University Nueva Granada); Edith Paola Estupiñan Cuesta (Military University Nueva Granada); Juan Carlos Martinez Quintero (Military University Nueva Granada)	ID 10: Selection of training parameters for physical therapy movement discrimination networks Anny Espitia-Cubillos (Military University Nueva Granada); Javier Martinez (University of the Llanos)
11:00	11:20	ID 16: Analysis of the Current State and Utilization of 5G in Latin America: Challenges and Opportunities Adriana Mejia Piza (Military University Nueva Granada); Edith Paola Estupiñan Cuesta (Military University Nueva Granada); Juan Carlos Martinez Quintero (Military University Nueva Granada)	ID 14: DeepSeek at the Edge: Ticket Classification with Resources Luis Leal (Military University Nueva Granada); Edith Paola Estupiñan Cuesta (Military University Nueva Granada); Juan Carlos Martinez Quintero (Military University Nueva Granada); Brayan Steven Mendivelso Perez (Military University Nueva Granada)
11:20	11:40	ID 6: Docker Swarm Orchestration on digital deserts: Laboratory prototype at the National University of Colombia Henry Zarate (National University of Colombia); Jorge Eduardo Ortiz Triviño (National University of Colombia); Oscar Agudelo Rojas (National University of Colombia); Cristian Camilo Vargas Morales (National University of Colombia)	ID 26: Toward Energy-Aware and User-Centric AI Orchestration in the Computing Continuum: A Problem Formulation and Preliminary Workload Analysis Pablo Rojas Yepes (Industrial University of Santander); Carlos Jaime Barrios Hernández (Industrial University of Santander); Oscar Carrillo (University of Lyon, CPE, INSA Lyon, Inria, CITI); Frédéric Le Mouëll (University of Lyon, CPE, INSA Lyon, Inria, CITI)
11:40	12:00	ID 12: On the Feasibility of GPS-Free Localization in LPWAN for Environmental Monitoring: A Review and Critical Analysis Juan Martinez (Military University Nueva Granada); Edward Guillén (Military University Nueva Granada)	ID 7: Detecting Natural and AI-Generated Speech with FakeVoiceFinder Daniel Suárez (Military University Nueva Granada); Dora Ballesteros (Military University Nueva Granada)
12:00	12:20	ID 28: A Meshtastic-based LoRa Mesh System for Smart Campus Applications: From Solar-Powered Sensing to Containerized Data Management Rafael Garzon Andosilla (UMNG); Jose Rugeles (UMNG)	ID 18: Efficiency-Aware Implementation of Deep Learning Algorithms in Healthcare Felix Mejia (Industrial University of Santander); Carlos Jaime Barrios Hernández (Supercomputing and Scientific Calculation, SC3UIS, Industrial University of Santander); John Anderson Garcia Henao (Digital Medicine Unit. Balgrist University Hospital Zurich); Michel Riveill (National Institute for Research in Digital Science and Technology, INRIA, France)
12:20	12:40	ID 27: Resilience Analysis in Off-Grid LoRa Mesh Networks: Evaluation of Meshtastic Profiles in Long-Range Propagation Scenarios Edgar Quiroz (UMNG); José Rugeles (UMNG); Guillermo Hernandez (UMNG)	ID 30: Efficiency-Based Machine Learning Model Selection Framework for Seizure Detection in IoT Architecture Gabriel Puerta
Plenary sessions Auditorium F			
12:40	13:30	CATAI Network Meeting/Conclusions and Closing Remarks Open Space for Professors and Researchers. Discussion of Proposals for the Growth and Strengthening of the Network.	

Sponsors



UNIVERSIDAD MILITAR
NUEVA GRANADA



INSA

INSTITUT NATIONAL
DES SCIENCES
APPLIQUEES
LYON

