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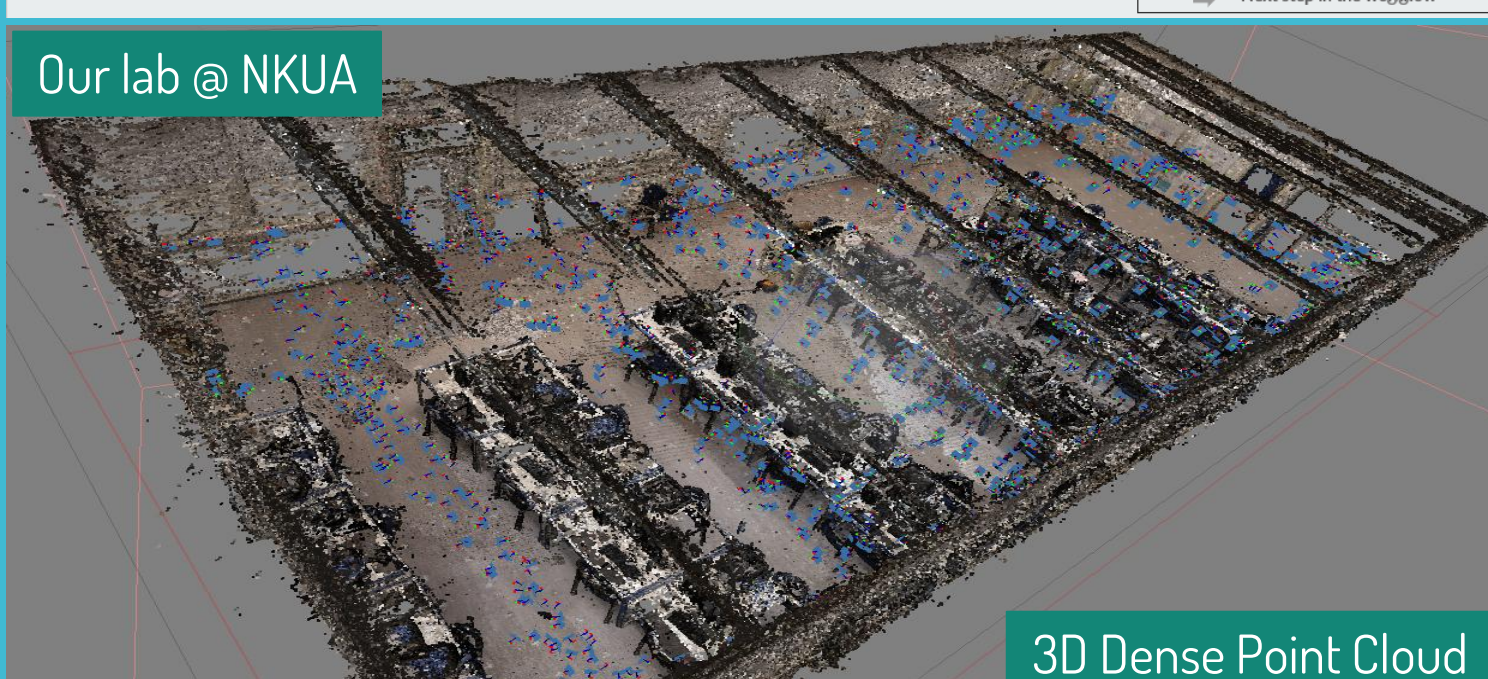
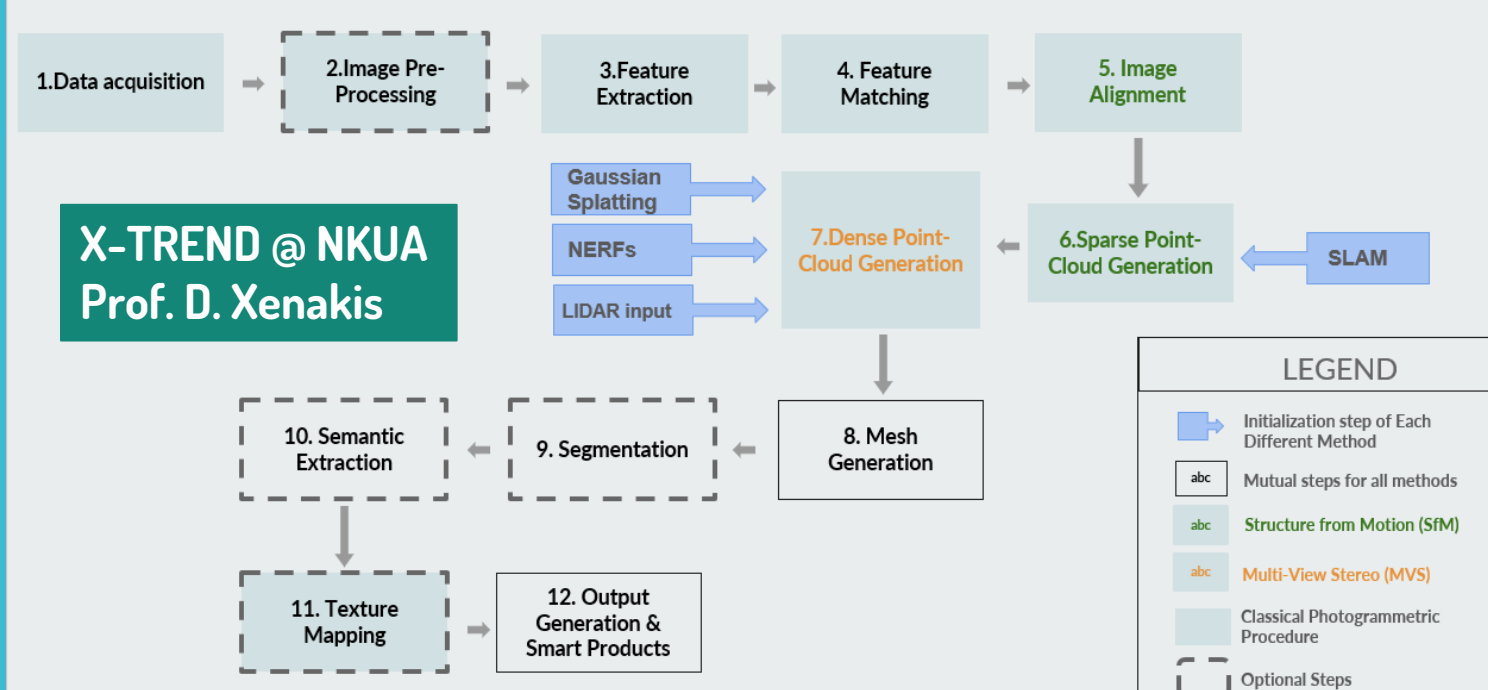


FOCUS AREAS

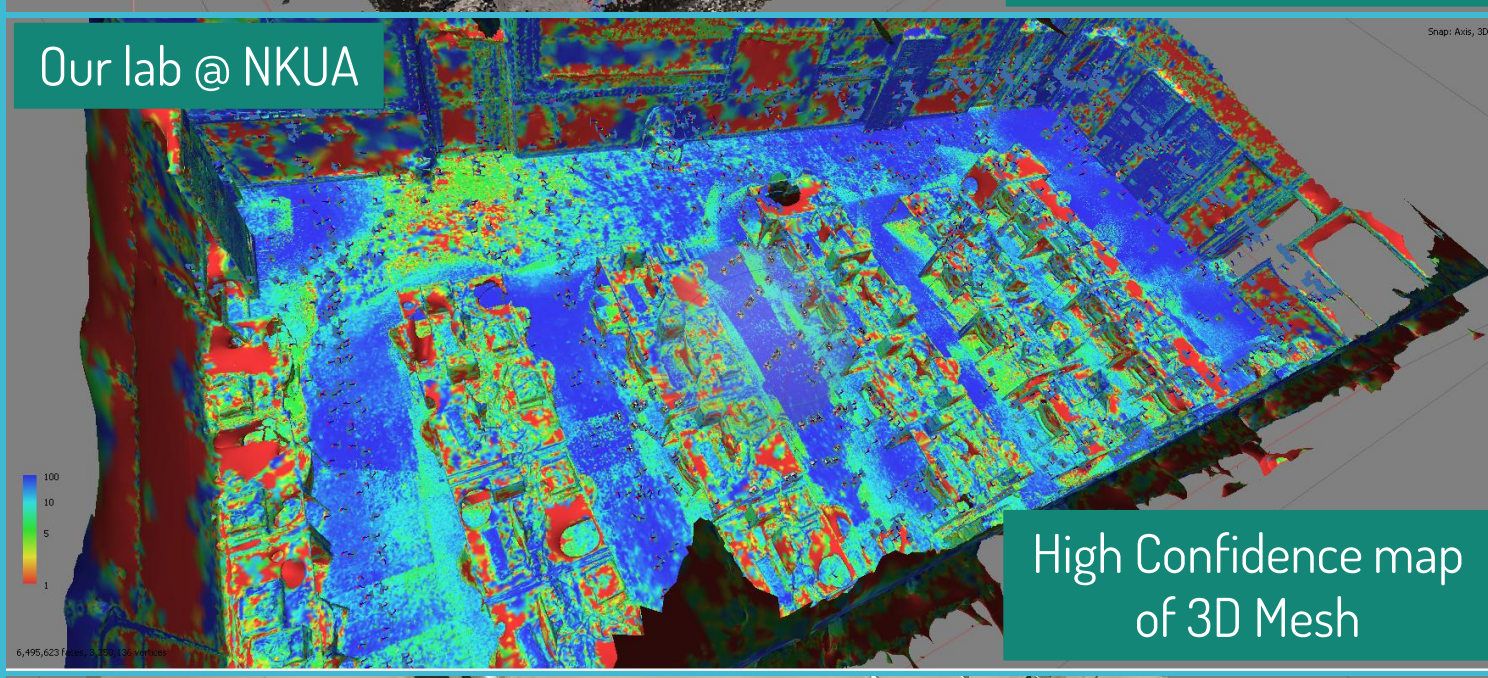
- 5G/6G mobile data services empowered by **edge computing**
- Blockchain-backed** systems
- Digital Twins** & AR/VR apps
- 3D mapping & reconstruction** of industrial assets/setup
- Traceability 4.0** | Digital Threads
- Algorithmic design and performance analysis
- Academia/Industry synergies

3D Mapping and Reconstruction

General Workflow of 3D reconstruction



3D Dense Point Cloud



High Confidence map of 3D Mesh



3D Model with Texture

X-TREND:industry X.0 Twins, REality and Network eDge technologies research group

MEET THE TEAM [2025]



Dafne Panopoulou
Candidate PhD, NKUA
Specialty: Explainable AI (XAI), Medical data analytics



Maria Melina Dolapsaki
Candidate PhD, NKUA
Specialty: Computer Vision, Digital Twins, AI



Anastasia Tsiota
Candidate PhD, NKUA
Specialty: Performance Analysis, Blockchain, Network Security



Panagiota Xepapadakov
Candidate PhD, NKUA
Specialty: Maths, Blockchain-Backed Networked Systems



Ioannis Stamoulis
Candidate PhD, NKUA
Specialty: Embedded Software, Drones, Blockchains



Aias Sotiropoulos
Game Developer
Specialty: Immersive Apps, Digital Twins



Klearchos Palias
Candidate PhD, NKUA
Specialty: Edge Computing, AR/VR systems, Indoor



Prof. Dionysis Xenakis
Group Leader, NKUA



Panagiotis Theodoropoulos
Candidate PhD, NKUA
Specialty: Blockchain, Software, Network Security



Ioannis Vittorakis
Candidate PhD, NKUA
Specialty: Computer Vision, Digital Twins, SW dev



Giorgos Kalpaktsoglou
Software Architect
Specialty: Edge Computing, DevOps



GENOME DC1 (2026)
Candidate PhD, NKUA
Specialty: ML, Network Slicing, Cloud/Edge Ops



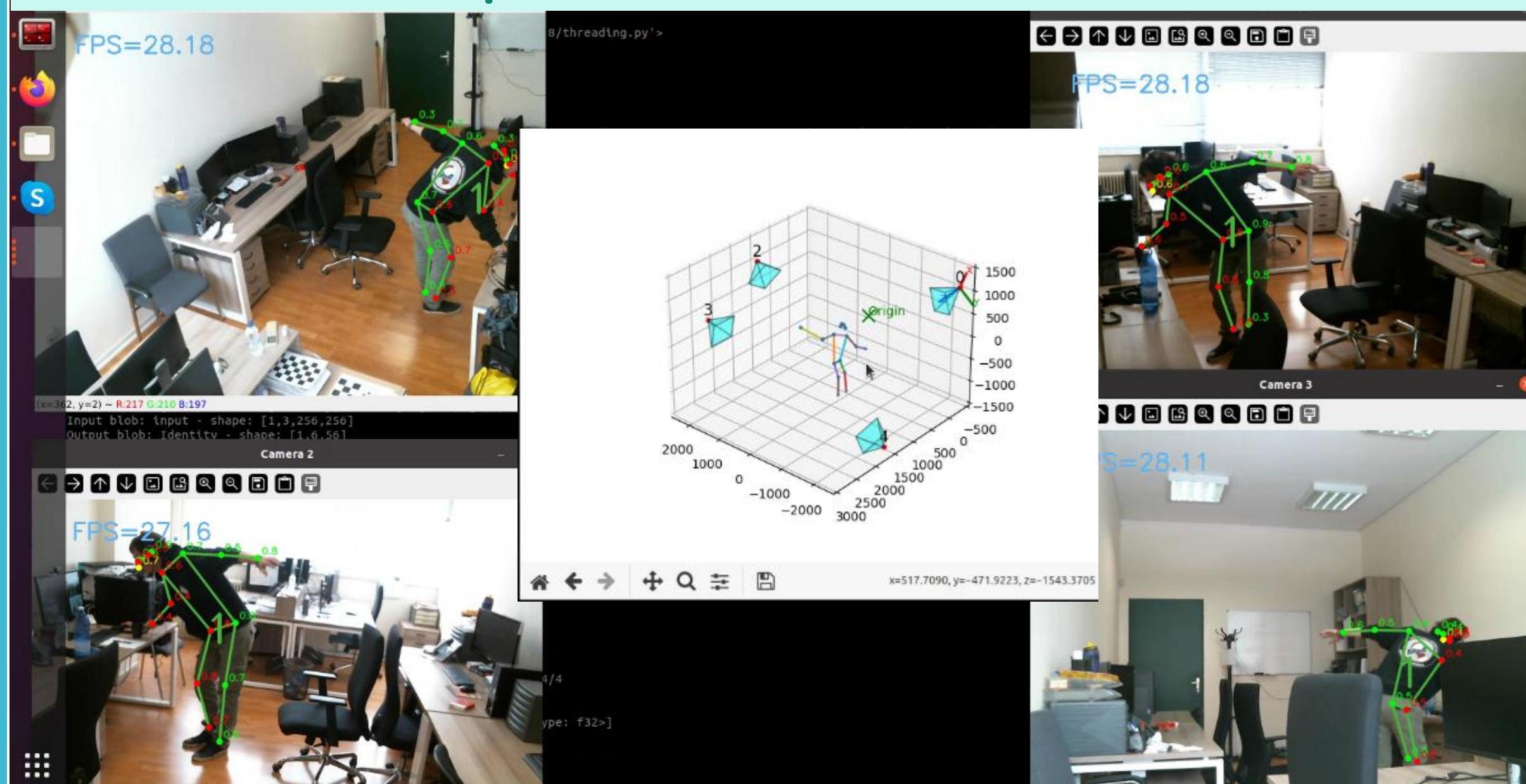
GENOME DC2 (2026)
Candidate PhD, NKUA
Specialty: AI Resilience, Differential Privacy DRL



GENOME DC3 (2026)
Candidate PhD, NKUA
Specialty: Neurosymbolic AI, ORAN, 6G

APPLIED RESEARCH TOPICS [Highlights for 2025]

Multi-camera Multi-person 3D Human Pose Estimation in Real-time

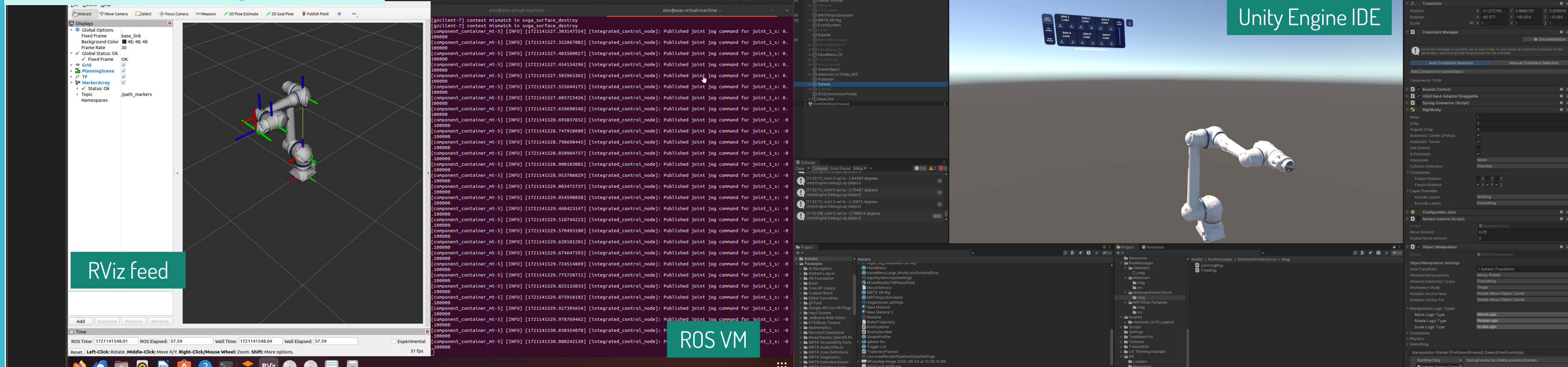


What is it: combines computer vision, AI and geometric techniques to estimate the location of multiple persons in the 3D space, using input from calibrated cameras dispersed around an area of interest

Why it matters: robust against occlusion, lightning, and texture effects, minimum invasion to existing infrastructures/setup, enhances human-robot interaction

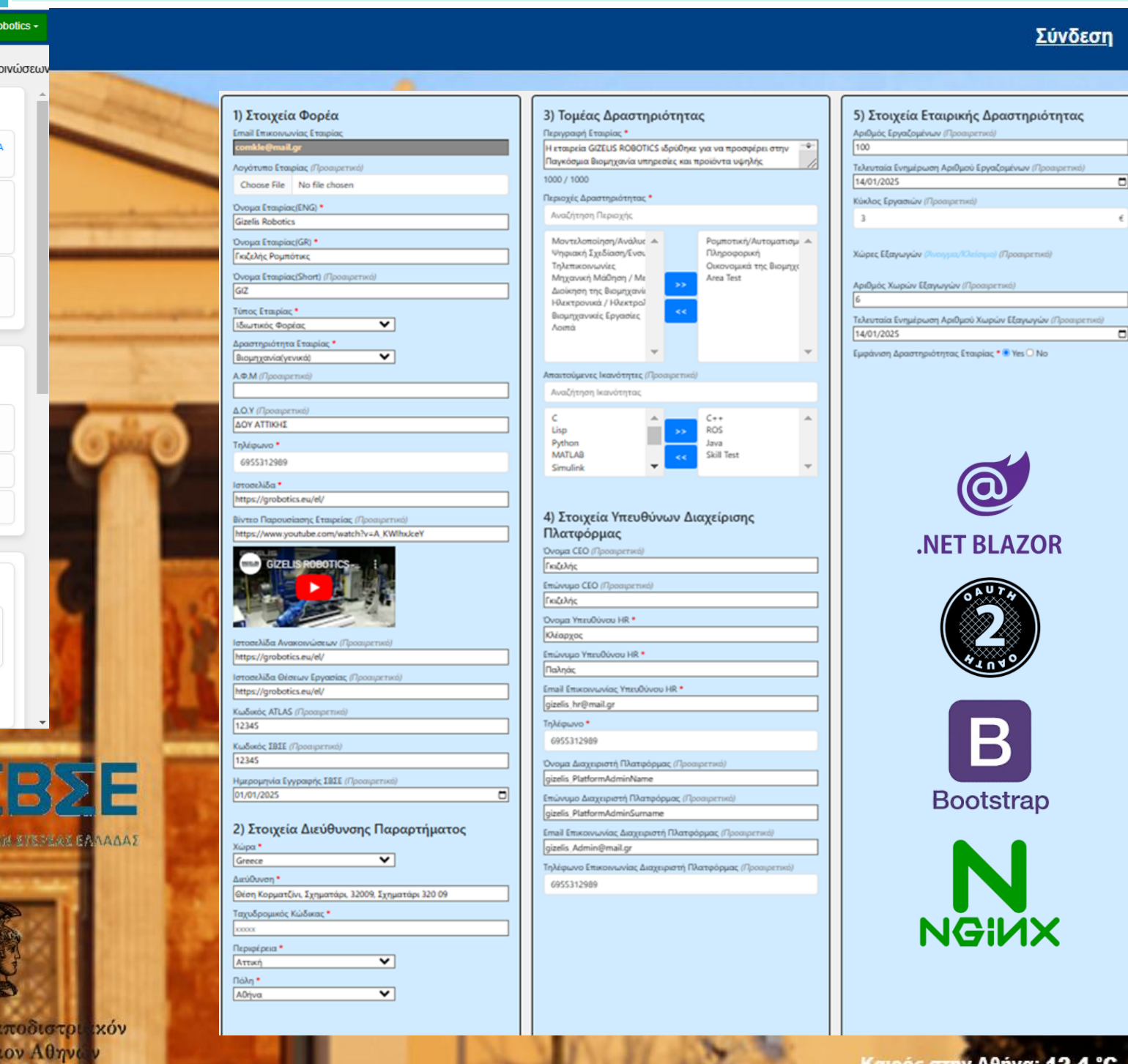
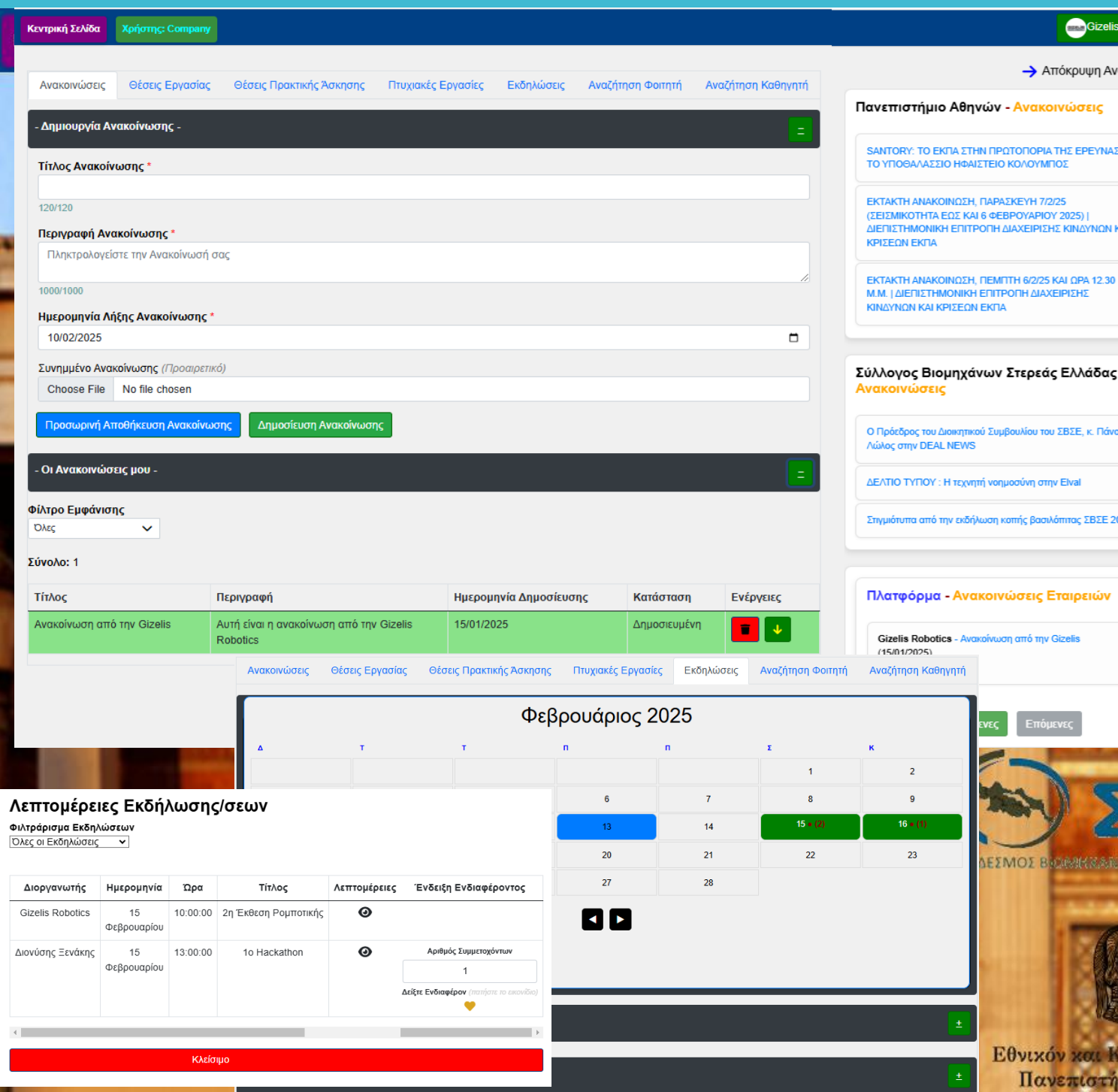
Applications: Motion Capture / Actions Understanding in working setups (safety, well-being, productivity, etc.), Healthcare and Rehabilitation, Smart Retail and Crowd Monitoring, Surveillance and Security, Sports Analytics and Biomechanics

Robotic Arm Digital Twin



What is it: An interactive (two-way) cross-platform ROS-enabled digital twin of a Robotic Arm along with immersive AR/PC Apps
What it can do: Be attached to ROS-enabled robotic assets. Currently demonstrated with full-stack ROS VMs, Moveit2 and RViz.
Why it matters: It provides *enhanced visibility* and seamless remote control of robotic assets. We currently use it to create isolated, deceptive fully-fledged virtual counterparts of real-life Industry X.0 assets to mislead threat actors, divert ongoing attacks and gather critical information on the attackers' profile, the attack surface, the attack patterns, and the intrusion point.

Academyhub.gr: The Online Platform for fostering deeper and meaningful Industry – Academia synergies



- Secure role-based access (OAuth2.0): Enterprise, Professor, Student
- Profile creation (privacy-perseverance, social media, video, enterprise figures, statistics, CV, Areas/Skills/Techs of Interest)
- Keyword-based search for everyone (only for 'open' profiles)
- Announcements and live feeding from websites
- Joint calendar and online event management (posting, expression of interest, transport matching, Google maps integrated)
- Internship management (posting, expression of interest, acceptance /rejection, 3-way agreements)
- Job management (posting, expression of interest, acceptance /rejection, 3-way agreements)
- Theses management (posting, expression of interest, acceptance /rejection, 3-way agreements)
- HR and coaching resources for students
- Online asynchronous collaboration/interest matching with max visibility (looking for a professor or a project partner in area X?)

ACTIVITIES INVOLVED



Head/Contact point of the **CISCO Networking Academy @ NKUA**

ΑΔΑ: 6HEΦ46ΨΖ2N-110



Coordinator of a 6-member industry/academia committee implementing the **MoU between NKUA and the Association of Industries of Central Greece**

ΑΔΑ: 6Δ6846ΨΖ2N-MEΩ

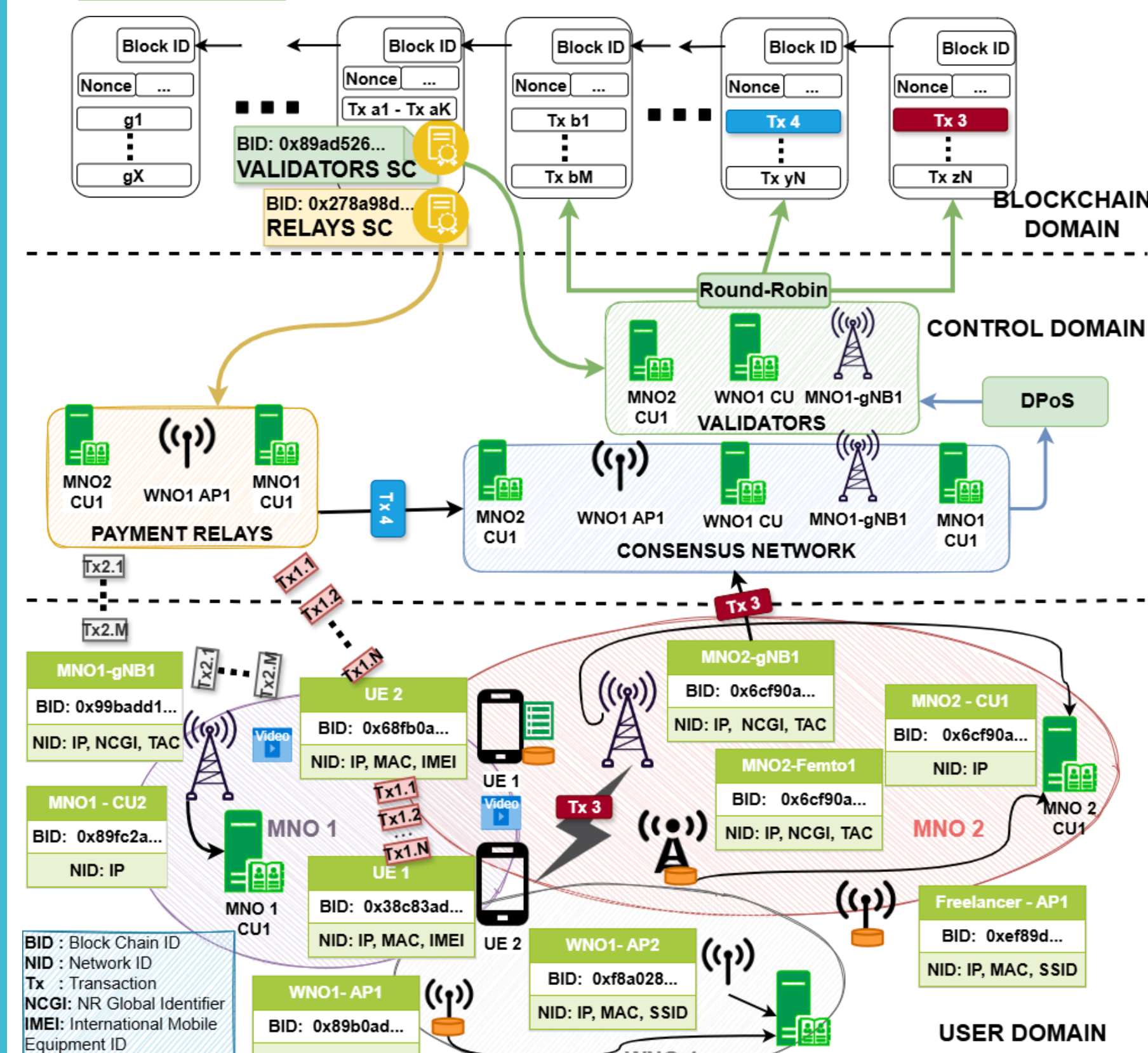


Committee member of the **Innovation and Business Accelerator program @ ARCHIMEDES, NKUA**

ΑΔΑ: Ψ9Π046ΨΖ2N-ΥΑΣ

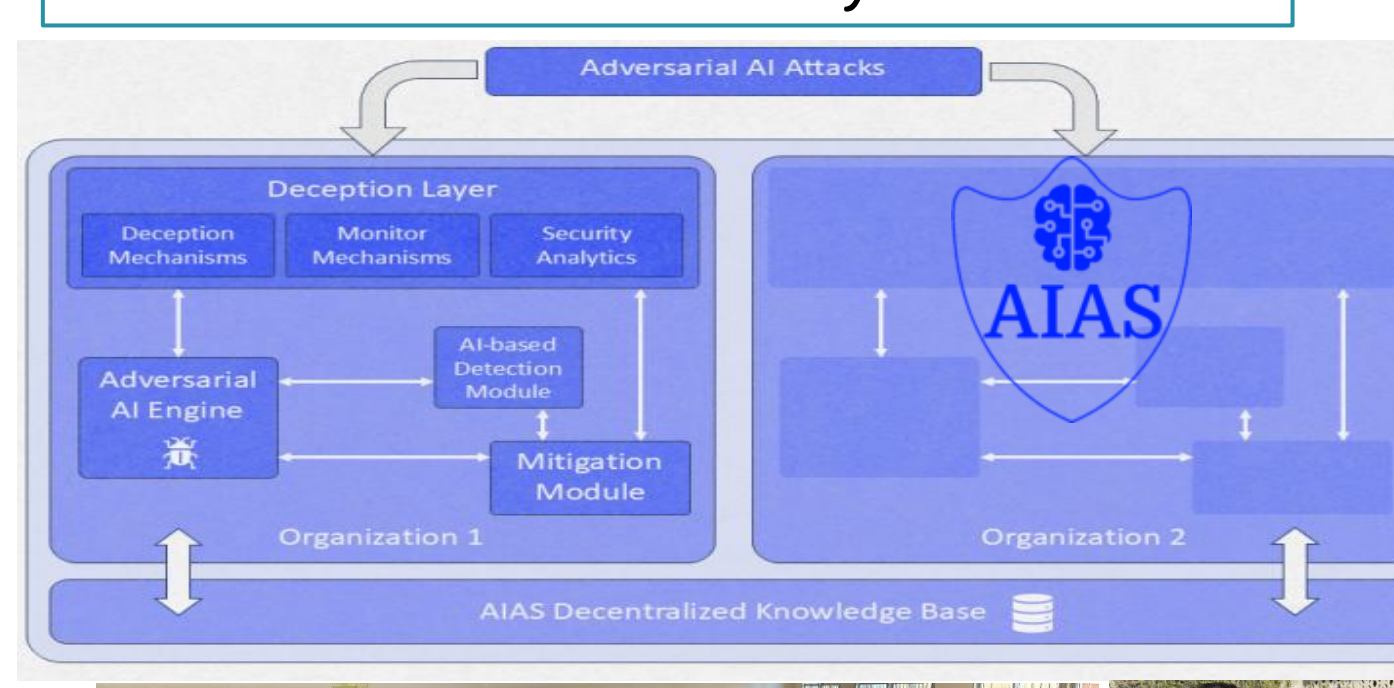


SOVEREIGN



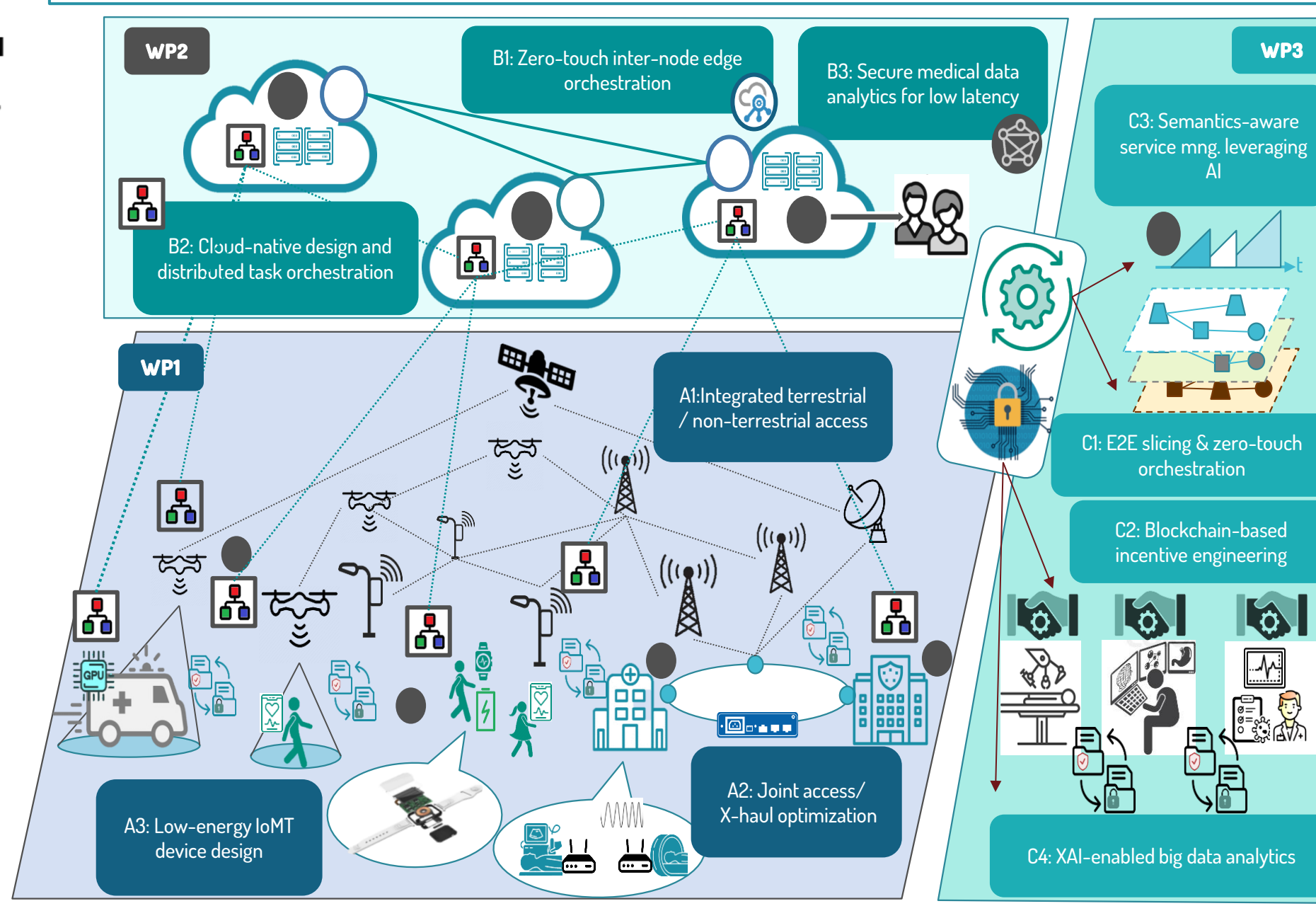
HE-MSCA-SE-SOVEREIGN (G.A. 101131481):

Distributed ledger technologies and user-driven automation towards self-SOVEREIGN mobile data access in beyond 5G nets



EU-FUNDED ACTIONS [2025]

HE-MSCA-DN-ELIXIRION (G.A. 101120135): rEaLlzing healthcare 4.0 exPloiting the 6G netwoRk evolution



OPTIMIST

H2020-MSCA-RISE-OPTIMIST (G.A. 872866):

OPTIMised video content delivery chains leveraging data analysis over joint multi-access edge computing and 5G radio network infraStructures

HE-MSCA-SE-AIAS (G.A. 101131292):

AI-ASsisted cyber security platform empowering SMEs to defend against adversarial AI attacks

