

Dimitris Selis

✉ dimitrios.selis@upc.edu  web  LinkedIn  Scholar

RESEARCH SCOPE

Cloud-Edge Computing, Elastic resource management, ML for Systems, Reinforcement Learning

EDUCATION

Polytechnic University of Catalonia (UPC) Jan 2023 – Present
Barcelona, Spain
PhD in Telecommunications Engineering
Advisors: Luis Alonso Zárata & Christos Verikoukis
Dissertation: Learning-Based Elastic Resource Management and Scheduling for Autonomous Cloud-Edge Networks.

University of Patras Oct 2014 – Sep 2021
Patras, Greece
MEng in Computer Engineering
Thesis: Designed and deployed a container-based weather forecasting platform on GKE.

EXPERIENCE

Athena Research & Innovation Center Jan 2023 – Present
Athens, Greece
Collaborating Researcher

- Designed, built and evaluated Kubernetes-based cloud-edge distributed systems, improving scalability, reliability and performance under workload uncertainty.
- Technical contribution to EU-funded large-scale engineering projects, including system architecture design, implementation planning and cross-team coordination.

Saphetor Sep 2021 – Mar 2022
EPFL Lausanne, Switzerland
Software Engineer / Research Intern

- Developed anomaly detection pipelines for genomic data.
- Designed end-to-end data analysis workflows.

RESEARCH SYSTEMS & OPEN SOURCE

KEDA Scaler Contribution Open Source

- Contributed to Kubernetes Event-Driven Autoscaling through a scaler implementation regarding multi-signal SLAs.

MIND — Transformer-based RL Scheduler and Placement Optimizer IEEE TCC, under review

- Designed a Kubernetes-native cloud-edge orchestration framework that unifies service provisioning and placement through a Transformer-enhanced DRL policy. The system incorporates inter-node latency embeddings for graph topology awareness, SLA-aware scheduling and entropy-guided action masking for stable autonomous workload placement.

KARMA — Knowledge-Aware Resource Management and Autoscaling GLOBECOM 2025

- Designed a learning-based autoscaling framework for cloud-edge workloads, targeting SLA-aware resource allocation under workload uncertainty.

ADDAPT6G — RL-Based Proactive Tuning for 6G Networks ICC 2025

- Developed a reinforcement-learning-based control architecture for proactive network and resource tuning in autonomous 6G/cloud-edge environments.

SCALER — SLA Explanation and Resolution Framework ICC 2026

- Co-built a framework for explaining and resolving SLA violations in autonomous cloud-edge and 6G systems, combining unsupervised probabilistic autoencoders for ensemble uncertainty estimation with LLM explanations (MISTRAL-7B).

CONFERENCE PUBLICATIONS

- Z. Panou, D. Selis, K. Ramantas, L. Alonso and C. Verikoukis, "SCALER: Self-Consistent Assessment for SLA Explanation and Resolution in 6G Networks," *IEEE ICC 2026*

- **D. Selis**, K. Ramantas, L. Alonso, J. S. Vardakas and C. Verikoukis, "KARMA: Knowledge Aware Resource Management and Auto-scaling for cloud-edge workloads", *IEEE GLOBECOM 2025*
- **D. Selis**, K. Ramantas, L. Alonso, J. S. Vardakas and C. Verikoukis, "ADDAPT6G: Advanced Double Dueling Architecture for Proactive Tuning in 6G Networks," *IEEE ICC 2025*
- Y. Kyriakopoulos, **D. Selis**, K. Ramantas and C. Verikoukis, "Scaling-Ops: SLA-Compliant Resource Management via Offline Reinforcement Learning Pipeline," *IEEE NFV-SDN 2025*
- G. Famitafreshi, M. Trigka, **D. Selis**, J. Vardakas and C. Verikoukis, "An Innovative Multi-Scale Strategy-Based Decision Engine for Zero-Touch Management and Orchestration in 6G," *IEEE CAMAD 2024*

JOURNAL PUBLICATIONS

- **D. Selis**, K. Ramantas, L. Alonso and C. Verikoukis, "MIND the Proximity: A Transformer-based RL Scheduler and Placement Optimizer for Cloud-edge Workloads, *IEEE Transactions on Cloud Computing*, under review.

AWARDS

IEEE CSIM 6G Industrial Dissemination Day (IDD) Award 2025
 Recognized for excellence in originality, technical rigor and industry relevance of research contributions. Awarded travel sponsorship for IEEE ICC 2025

TEACHING EXPERIENCE

Teaching Assistant Spring 2024, Spring 2025, Spring 2026
 5G Architectures, enabling technologies and KPIS (CEIDNE577) CEID, University of Patras

Teaching Assistant Fall 2024
 Fundamentals of Cellular Networks (CEIDNE592) CEID, University of Patras

STUDENT ADVISEES

Yannis Kyriakopoulos MEng CS 2024-2025
 SLA-Compliant Resource Management via Offline Reinforcement Learning

Athanasios Tasis MEng CS ongoing
 RL-assisted Elastic Service Management in Cloud-edge

REVIEWER* / PROGRAM COMMITTEE[§]

IEEE Conference on Network Function Virtualization and Software Defined Networks[§] 2026

IEEE Networking Letters* 2024-2026

IEEE International Conference on Cloud Networking (Cloud-Net)[§] 2026

IEEE Conference on Network Function Virtualization and Software Defined Networks[§] 2025

IEEE Global Communications Conference (GLOBECOM)* 2025

IEEE International Conference on Communications (ICC)* 2025

IEEE International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)[§] 2024

SELECTED SOFTWARE PROJECTS

Hestia — Erasmus students community integration Personal project

- Built a platform for Erasmus students in Greece to support room sharing, housing discovery and community integration. Implemented profile-based matching and semantic search using Qdrant vector indexing, alongside user profiles, listings, community features and location-aware discovery workflows.

UniBite — Campus Food-Sharing Web Application

Personal project

- Built a client–server food-sharing platform to reduce campus food waste, using HTML/TailWind/JavaScript/jQuery, Leaflet & OSRM

TECHNICAL SKILLS

Orchestration & Monitoring

Docker · Kubernetes · Prometheus · Grafana/K6 · KEDA

Machine Learning & Deep Learning

PyTorch · StableBaselines3 · TensorFlow · Transformers/Hugging Face

MLOps

KubeFlow · SageMaker

Data Storage & Indexing

Relational: MySQL · PostgreSQL · SQLite

Time-series: InfluxDB

Vector-search: Qdrant

Programming

Bash · Python · C++ · Go · Javascript

LANGUAGES

Greek Native

English Fluent

French Upper Intermediate