



# Research & Development Summary

**Research** Published at top systems conferences ([NSDI'18](#), [CoNEXT'19](#), [NSDI'22](#)) and journals ([ACM TOCS'21](#)). My research is featured in the [ACM Technews](#), [PHYS.ORG](#), [ECN](#), [KTH](#), and [APNIC](#). Reviewer for scientific journals (e.g., IEEE/ACM Transactions on Networking). Since 2010, I have been participating in 17 (mainly EU) research projects.

**Development** [Module owner](#) and main contributor to the industrial-grade network operating system [ONOS](#) and the [Data Plane Development Kit \(DPDK\)](#). Co-leading open source projects in SDN & NFV: [ETSI TFS](#), [FastClick](#), Metron's [control](#) and [data](#) planes, as well as [RSS++](#) and [NICBench](#).

## Experience

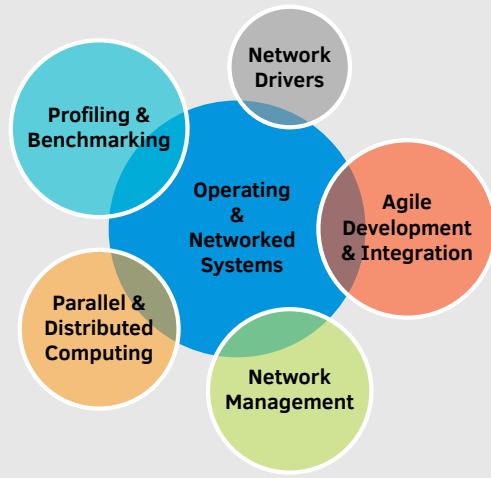
|                        |   |   |
|------------------------|---|---|
| Nov. 2019<br>Present   | <b>Senior SDN/NFV R&amp;D Engineer &amp; Product Owner</b>  | <a href="#">UBITECH</a>   |
|                        | Mission: Design & implement a state-of-the-art <a href="#">service and resource orchestrator</a> for modern 5G and beyond infrastructures using:  |   |
|                        | <ul style="list-style-type: none"> <li>Standardized TM Forum service and resource <a href="#">APIs</a>.</li> <li>Open Infrastructure as Code tools combining K8s, git, &amp; more.</li> <li>A programmable cloud-native <a href="#">5G software stack</a>.</li> <li>An SDN fabric in P4 through contributions to <a href="#">ETSI standards</a>.</li> </ul>       |   |
|                        | <u>Tools</u> : Kubernetes, ProxMox, Terraform, gitops, P4, DPDK, Open5GS.   |   |
|                        | <u>Hardware</u> : AMD EPYC architecture, 200 GbE NVIDIA Bluefield-2 and 100 GbE Xilinx Alveo SN 1000 SmartNICs, 400 GbE Intel Tofino-2 P4 switch, NVIDIA JETSON GPUs, and Amarisoft & ETTUS 5G hardware.  |   |
| Oct. 2019<br>Sep. 2020 | <b>Post Doctoral Researcher</b>   | <a href="#">KTH NSLab</a>   |
|                        | <ul style="list-style-type: none"> <li><a href="#">Reframer</a> packet scheduler for low latency Internet services.</li> <li>Benchmarked the classifiers of 100-200 GbE Mellanox NICs.</li> </ul>   |   |
|                        | <u>Tools</u> : DPDK, Click, OVS, Mellanox drivers, and DevOps.  |   |
|                        | <u>Hardware</u> : Intel architectures and Mellanox Smart NICs.  |   |
| Feb. 2019<br>Oct. 2019 | <b>Military Service</b>   | <a href="#">Computer Science and Research Division @ Greek Army</a> |
|                        | Networked systems engineer at the Department of Networking.   |   |
| Oct. 2018<br>Dec. 2018 | <b>Post Doctoral Researcher</b>   | <a href="#">KTH NSLab</a>   |
|                        | <ul style="list-style-type: none"> <li>Integrated NFV service chains with blackboxes at 100 Gbps.</li> <li>Designed <a href="#">RSS++</a> for intra-server load-balancing at 100 Gbps.</li> </ul>   |   |
|                        | <u>Tools</u> : Linux, ONOS, DPDK, Click, SR-IOV, KVM, and DevOps.   |   |
|                        | <u>Hardware</u> : Intel architectures and Mellanox NICs.  |   |
| May 2017<br>Sep. 2018  | <b>Industrial Ph.D. Student</b>   | <a href="#">RISE</a> and <a href="#">KTH NSLab</a>                  |
|                        | <ul style="list-style-type: none"> <li>Implemented <a href="#">Metron</a> for NFV service chaining at 100 Gbps.</li> <li>Implemented dynamic scaling techniques for NFV at 10 Gbps.</li> </ul>  |   |
|                        | <u>Tools</u> : ONOS, DPDK, Click, OpenFlow, REST, and DevOps.   |   |
|                        | <u>Hardware</u> : Intel architecture, Mellanox NICs, & OpenFlow switches.   |   |
| Jul. 2014<br>Apr. 2017 | <b>Licentiate Student (Halfway to Ph.D.)</b>  | <a href="#">KTH NSLab</a>   |
|                        | <ul style="list-style-type: none"> <li>Synthesized the internal operations of NFV service chains with <a href="#">SNF</a>, enabling complex service chains to operate at line-rate 40 Gbps.</li> <li>Combined profiling and task scheduling techniques with I/O batching (<a href="#">SCC</a>) to reduce the latency of traversing NFV service chains.</li> </ul> |   |
|                        | <u>Tools</u> : Linux, Perf, Intel PCM, DPDK, ixgbe, Click, OpenFlow, and Git.   |   |
|                        | <u>Hardware</u> : Intel architecture, Intel NICs, and OpenFlow switches.  |   |
| Oct. 2013<br>Jun. 2014 | <b>Research Assistant</b>   | <a href="#">IMDEA Networks</a>                                      |
|                        | <ul style="list-style-type: none"> <li>Integrated heterogeneous SDN control planes.</li> </ul>  |   |
|                        | <u>Tools</u> : Linux, OpenDaylight, Ryu/POX, Mininet, OpenFlow, and SVN.  |   |
| Apr. 2010<br>Sep. 2013 | <b>Research Assistant</b>   | <a href="#">NKUA SCAN Lab</a>                                       |
|                        | <ul style="list-style-type: none"> <li>Developed machine learning techniques for autonomic network management in heterogeneous wireless networks.</li> </ul>  |   |
|                        | <u>Tools</u> : Linux (OpenWrt), Java, REST, and SVN.  |   |

## Georgios P. Katsikas

Ph.D., Computer & Networked Systems

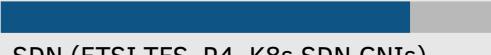
- [gkatsikas@ubitech.eu](mailto:gkatsikas@ubitech.eu)
- [gkatsikas.github.io](https://github.com/gkatsikas)
- [georgioskatsikas](https://www.linkedin.com/in/georgioskatsikas/)
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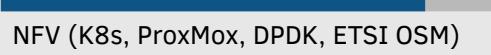
## Technical Skills Overview



## Programming

- Linux • C • C++ • Java • Python

 SDN (ETSI TFS, P4, K8s SDN CNI)

 NFV (K8s, ProxMox, DPDK, ETSI OSM)

- Git • Docker • Helm • Ansible

## Education

### Ph.D., Computer & Networked Systems

KTH Royal Institute of Technology  
Dep. of Communication Systems  
2014 - 2018 | Stockholm, Sweden

### M.Sc., Comm/tion Systems & Networks

National & Kapodistrian University of Athens  
Dep. of Informatics & Telecommunications  
2010 - 2012 | Athens, Greece

### B.Sc., Informatics & Telecommunications

National & Kapodistrian University of Athens  
Dep. of Informatics & Telecommunications  
2005 - 2010 | Athens, Greece