Charalampos Rotsos

School of Computer and Communications
Faculty of Science and Technology
Lancaster University
InfoLab21

Last updated: March, 2024
ORCID: 0000-0003-0252-9373
email: c.rotsos@lancaster.ac.uk
Website: crotsos.github.io

GENERAL INFORMATION

PROFESSIONAL APPOINTMENTS

2017– **Lecturer**
School of Computer and Communications, Lancaster University, UK
SCC.150,SCC.365 module convenor, EPSRC Initiate, Toucan, NG-CDI project Co-I, Part-I tutor.

2015–2017 **Senior Research Associate – EPSRC TOUCAN**
School of Computer and Communications, Lancaster University, UK
Design and implement a technology-agnostic 5G network orchestration architecture.

2013–2015 **Research Associate – DARPA (MRC)2**
Computer Laboratory, University of Cambridge, UK
Port the Mirage OS framework to the CHERI CPU architecture.

2013 **Research Intern – DARPA (MRC)2**
Computer Science Laboratory, Stanford Research Institute, US
Develop a hybrid experimentation platform for cloud networks.

2011 **Research Intent – EPRSRC Homework**
Horizon Institute, Nottingham University, UK
Design a user-friendly home router architecture.

2010 **Research Intern – EU Ofelia**
Deutche Telekom, Technical University Berlin, Germany
Design a performance characterisation platform for OpenFlow devices.

2007–2009 **Research Assistant – EU SKIER**
Department of Informatics and communications, University of Athens
Develop an IoT wildfire detection platform using image processing.

EDUCATION

2018–2019 **PGCAP, Lancaster University, UK**
Thesis: "Improving gender equity in CS programs; towards an inclusive SCC curriculum"

2009–2014 **PhD in Computer Science, University of Cambridge, UK**
Thesis: "Scalable and Extensible Networks with Software Defined Networking"

2006–2007 **MSc in Data Communications, Networks and Distributed Systems, UCL, UK**

2001–2006 **BSc in Computer Science, University of Piraeus, Greece**

RESEARCH

Communication networks play a vital role in our daily social lives and economic activity, morphing into a national critical infrastructure. I develop algorithms, prototype systems and architectures that

improve the operational efficiency and resilience of modern communication infrastructures and enable the delivery of Future Internet services. My research expertise spans across all network layers, from hardware design to application, and allows me to develop systems that offer holistic optimization mechanisms. In parallel, I research novel autonomic management mechanisms that simplify network configuration, reduce operational cost and improve overall energy efficiency in network infrastructures.
I am a member of the SCC networking group, a research group with more than 30 years of international reputation on programmable and resilient networked systems and multimedia delivery research. My work enriches the existing network management research agenda with new expertise on network service orchestration for next generation mobile network technologies (5G, 6G), a priority research area of national and international funding bodies, like EPSRC, DCMS and H2020. I have an extensive research leadership portfolio, leading research activities in three EPSRC research projects, positions I acquired by supporting Prof. D. Hutchison to manage his research portfolio, while stepping down from his role and joining the 2021 REF panel. In parallel, I collaborate with several national (BT, BBC) and international (NEC, Ericsson) network vendors and operators, leading effective knowledge transfer projects that downstream research into production and standards.

RESEARCH PROJECTS

2019–2022 EPSRC "Next Generation Converged Digital infrastructure (NG-CDI)", (Amount: £2.5M, LU: £950k), PI: N. Race, Co-I: **C. Rotsos**, *Manage: M. Bezahaf, W. Fantom, B. Simms, E. Davies.*
This EPSRC prosperity partnership, in collaboration with BT, develops technologies that enable automated and autonomic management of production network infrastructures. I lead the research efforts of a team of researchers between Lancaster, Surrey and Cambridge developing mechanisms for autonomous network management and testing. The project develops prototype systems that improve the operational resilience and efficiency (energy, cost) in BT infrastructures.

2017–2020 EPSRC "The UK Programmable Fixed and Mobile Internet Infrastructure (INITIATE)", (Amount: £1.6M, LU: £400k), PI: D. Hutchison, Co-I: **C. Rotsos**. Manage: S. Simpson, P. Mccherry.
This EPRSC project developed the first open 5G experimentation testbed between four UK universities (Lancaster, Bristol, KCL, Edinburgh). I coordinated teams between Lancaster, Edinburgh, KCL, and Bristol in developing a production network orchestration platform. The testbed was used by several UK-based SMEs and academic groups to evaluate 5G technologies and use-cases.

2015–2021 EPSRC "Towards Ultimate Convergence (TOUCAN)", (Amount: £5.9M, LU: £800k), PI: D. Hutchison, Co-I: **C. Rotsos**, *Manage: A. Magzub, L. Hill, A. Farshad.*
This EPSRC project developed technology-agnostic convergence mechanisms for future network infrastructures (optical, wireless, visible light, mobile, compute). I coordinated research teams between Lancaster, Edinburgh and Bristol, in developing an intelligent service orchestration platform. Our research efforts developed fundamental research on network modeling and programmability, essential for the development for 5G technologies.

RESEARCH PROPOSALS

2022 EPSRC future communications systems early-stage federated hub call: "Pantheon" [Under Review]. (Amount: £ 2m - LU: £50k) Co-I: N. Race, **C. Rotsos**.
This EPSRC project proposal will create a multi-university research hub on the topic of Network of Networks. I will lead a work package on mobile network management and orchestration, in collaboration with UEA, QUB and UCL. The research will organize several funding calls for small research projects and contribute to shaping UK's roadmap towards 6G mobile systems.

EPSRC future communications systems early-stage federated hub call: "IncludeHUB" [Under Review]. (Amount: £ 2m - LU: £50k) Co-I: N. Race, **C. Rotsos**.
This EPSRC project proposal will create a multi-university research hub on the topic of cloud and distributed systems. I will lead a work package on cloud-edge continuum management, in collaboration with KCL, Loughborough and Glasgow. The research will organize several funding calls for small relevant projects and develop technologies that enable recent AI advances in network management mechanisms.

DCMS Future Open Networks Research Challenge: "Towards Ubiquitous 3D Open Resilient Network (TUDOR)" [Under Review]. (Amount: £ 12m - LU: £850k) Co-I: N. Race, **C. Rotsos**.
This DCMS project proposal will develop the fundamental research for the next generation of mobile networks (6G). The large project consortium (13 partners) includes two major mobile network vendors (Ericsson, Nokia), a cloud provider (Amazon) and all major UK mobile operators (BT, O2, Vodafone). I will lead the design of the management layer of the project and develop mechanisms that converge control across mobile and satellite infrastructures.

DCMS Future Open Networks Research Challenge: "Towards Holistic Openness in Future Mobile Networks" [Under Review]. (Amount: £4m - LU: £950k) Co-I: N. Race, **C. Rotsos**.
This DCMS project proposal will develop the first national open experimentation testbed for 6G mobile technologies. I will lead the design and implementation of a management and monitoring services.

2019 H2020: "Nestor" [Not funded - Score 14/15]. (Amount: £4m, LU: £650k) PI: D. Hutchison, Co-I: C. Rotsos, A. Marnerides.
This project proposal would develop an ICT framework for the management of distributed renewable energy infrastructures. Lancaster university lea a work package on security and resilience.

2018 H2020 Fed4Fire+ Open Call: "LEMNOS" [Not funded - Score 48/60]. (LU: £40k) PI: **C. Rotsos**, Co-I: A. Farshad. This small project proposal would develop mechanisms that integrate emerging orchestration mechanisms with Cloud OS technologies.

H2020 5GinFire Open Call: "ARCADINS" [Not funded - Score 21.5/25]. (LU: £40k) PI: **C. Rotsos**, M. Broadbent. This small project proposal would develop a monitoring framework using lightweight virtualization technologies (Unikernels).

2016 H2020 MC-ETN: "5G-Nordic" [Not funded - Score 86%]. (Amount: £2m, LU: £200K) PI: Andreas Mauthe, Co-I: **C. Rotsos**. This H2020 ETN project proposal aimed to develop an inter/multidisciplinary training network on 5G technologies. Lancaster university led a work package on 5G resilience.

SELECTED PAPERS

R Oudin, G Antichi, C Rotsos, AW Moore, S Uhlig. OFLOPS-SUME and the art of switch characterization. *IEEE Journal on Selected Areas in Communications*, 2018, vol. 36, no. 12, pp. 2612-2620, Impact Factor: 17.01. doi:10.1109/JSAC.2018.2871235
The paper summarizes the results of a long-running multi-dimensional study of OpenFlow switch implementations. Early results of this work identified the challenges to implement the OpenFlow protocol in hardware and influenced research efforts on control plane consistency.

W. Fantom, P. Alcock, B. Simms, C. Rotsos and N. Race. A NEAT way to test-driven network management, Acceptance Rate: 29.6%. *2022 IEEE/IFIP NOMS*, pp. 1-5, doi:10.1109/NOMS54207.2022.9789909.
NEAT is the first open-source automated testing platform for network DevOps. Demos of the system were presented to various BT stakeholders, as well as the TMF AN group SDO. The resulting platform will be used to support the 6G digital twin platform for the TUDOR project.

S. Simpson, A. Farshad, P. McCherry, A. Magzoub, W. Fantom, C. Rotsos, N. Race, D. Hutchison. DataPlane Broker: Open WAN control for multi-site service orchestration. *2019 IEEE NFV-SDN*, Acceptance rate: 32%. doi:10.1109/NFV-SDN47374.2019.9040084
The DataPlane Broker was the first open-source WAN platform to support point-to-multipoint connectivity. A demo of the platform was accepted as a Proof of Concept project by the ETSI NFV Special Interest Group, code of the platform has been integrated with the ETSI OSM orchestrator source code and influenced revisions in the NFV-MANO model to support multi-cloud service orchestration.

J.H. Han, P. Mundkur, C. Rotsos, G. Antichi, N. Dave, A.W. Moore, P.G. Neumann. Blueswitch: Enabling provably consistent configuration of network switches. *ACM/IEEE ANCS*, pp. 17-27, doi:10.1109/ANCS.2015.7110117 (Acceptance Rate: 28%, 40 References)
This paper presents a collaboration between Lancaster University, Stanford Research Institute and Cambridge University in developing the first open source OpenFlow switch architecture with built-in support for consistent updates with strong correctness guarantees. The system influenced the field of network programmability and open hardware. The work of this paper helped us to organize two successful tutorial sessions in ACM Sigcomm 2015 and IEEE NetSoft 2015.

C. Rotsos, D. King, A. Farshad, J. Bird, L. Fawcett, N. Georgalas, M. Gunkel, K. Shiomoto, A. Wang, A. Mauthe, N. Race, D. Hutchison. Network service orchestration standardization: A technology survey. *Elsevier Computer Standards & Interfaces*, vol. 54, no. 4, pp. 203-215, 2018, doi:10.1016/j.csi.2016.12.006 (Impact Factor: 3.721, 88 references)
This is the first survey paper to cover the topic of network service orchestration in the field of network management. I collaborated with researchers from several major international network operators, including BT, Deutche Telekoms, China Telecoms and NTT. The survey strengthened the international recognition of the SCC networking group expertise on network orchestration and assisted us to join a number of standardization bodies.

CONFERENCES & JOURNALS

2022

A. Jung, H. Lefeuvre, C. Rotsos, P. Olivier, D. Oñoro-Rubio, F. Huici, and M. Niepert. Zero-knowledge OS optimization for cloud appliances. *2023 USENIX OSDI.* (under development).

W. Fantom, E. Davies, C. Rotsos, P. Veitch, S. Cassidy, and N. Race. NES: Towards lifecycle automation for emulation-based experimentation. *IEEE NOMS* (under review).

B. Lewis, M. Broadbent, C. Rotsos and N. Race. 4MIDable: Flexible Network Offloading For Security VNFs. *Journal of Network and Systems Management.* (under review).

P. Alcock, B. Simms, W. Fantom, C. Rotsos and N. Race. Improving Intent Correctness with Automated Testing. *2022 IEEE NetSoft*, pp. 61-66, doi:10.1109/NetSoft54395.2022.9844054.

L. Hill, C. Rotsos, W. Fantom, C. Edwards and D. Hutchison. Improving network resilience with Middlebox Minions. *IEEE/IFIP NOMS*, pp. 1-5, doi:10.1109/NOMS54207.2022.9789819.

N. Race, I. Eckley, A. Parlikad, C. Rotsos, N. Wang, R. Piechocki, P. Stiles, A. Parekh, T. Burbridge, P. Willis, and S. Cassidy. Industry-Academia Research toward Future Network Intelligence: The NG-CDI Prosperity Partnership. *in IEEE Network*, vol. 36, no. 1, pp. 18-24, doi:10.1109/MNET.001.2100405.

2021 A. Jung, H. Lefeuvre, C. Rotsos, P. Olivier, D. Oñoro-Rubio, F. Huici, and M. Niepert. Wayfinder: towards automatically deriving optimal OS configurations. *ACM SIGOPS Asia-Pacific Workshop on Systems.* pp. 115–122. doi:10.1145/3476886.3477506.

M. Bezahaf, S. Cassidy, D. Hutchison, D. King, N. Race, and C. Rotsos. A Model-Driven and Business Approach to Autonomic Network Management. *Journal of ICT Standardization*, vol. 9, no. 2, 229-256, doi:10.13052/jicts2245-800X.928.

M. Bezahaf, E. Davies, C. Rotsos and N. Race, To All Intents and Purposes: Towards Flexible Intent Expression, *IEEE NetSoft*, pp. 31-37, doi:10.1109/NetSoft51509.2021.9492554.

2020 C. Rotsos, A. Marnerides, A. Magzoub, A. Jindal P. McCherry, M. Bor, J. Vidler, D. Hutchison, Ukko: Resilient DRES management for Ancillary Services using 5G service orchestration, *IEEE SmartGridComm*, pp. 1-6, doi:10.1109/SmartGridComm47815.2020.9302980.

H. Alshaer, N. Uniyal, K. Katsaros, K. Antonakoglou, S. Simpson, H. Abumarshoud, H. Falaki, P. McCherry, C. Rotsos, T. Mahmoodi, R. Nejabati, D. Kaleshi, D. Hutchison, H. Haas, D. Simeonidou. The UK Programmable Fixed and Mobile Internet Infrastructure: Overview, capabilities and use cases deployment. *IEEE Access*, vol. 8, pp. 175398-175411, doi:10.1109/ACCESS.2020.3020894

N Hart, C Rotsos, V Giotsas, N Race, D Hutchison. λBGP: Rethinking BGP programmability. *IEEE NOMS*, pp. 1-9, doi:10.1109/NOMS47738.2020.9110331 doi:

2018 C. Rotsos, A. Farshad, D. King, D. Hutchison, Q. Zhou, A.J.G. Gray, C.X. Wang, S. McLaughlin. ReasoNet: Inferring network policies using ontologies. *IEEE NetSoft*,pp. 159-167, doi:10.1109/NETSOFT.2018.8460050

2017 C. Rotsos, D. King, A. Farshad, J. Bird, L. Fawcett, N. Georgalas, M. Gunkel, K. Shiomoto, A. Wang, A. Mauthe, N. Race, D. Hutchison. Network service orchestration standardization: A technology survey. *Elsevier Computer Standards & Interfaces*, vol. 54, no. 4, pp. 203-215, doi:10.1016/j.csi.2016.12.006

D King, C Rotsos, I Busi, F Zhang, N Georgalas. Transport Northbound Interface: The Need for Specification and Standards Coordination. *International Conference on Optical Network Design and Modeling*, doi:10.23919/ONDM.2017.7958527

2016 A. Chatzipapas, D. Pediaditakis, C. Rotsos, V. Mancuso, J. Crowcroft, A.W. Moore. Resolving data center power bill disputes: The energy-performance trade-offs of consolidation. *ACM e-Energy*, pp. 89-94, doi:10.1145/2768510.2770933

2015 N. Zilberman, P.M. Watts, C. Rotsos, A.W. Moore. Reconfigurable network systems and software-defined networking. *Proceesings of the IEEE*, vol. 103, no. 7, pp. 1102-1124, doi:10.1109/JPROC.2015.2435732

C. Rotsos, G. Antichi, M. Bruyere, P. Owezarski, A.W. Moore. OLOPS-Turbo: Testing the next-generation OpenFlow switch. *IEEE ICC*, pp. 5571-5576, doi:10.1109/ICC.2015.7249210

2014 D. Pediaditakis, C. Rotsos, A.W. Moore. Faithful reproduction of network experiments. *ACM/IEEE ANCS*, pp. 41-52, doi:10.1145/2658260.2658274

2013 A. Sathiaseelan, C. Rotsos, C.S. Sriram, D. Trossen, P. Papadimitriou, J. Crowcroft. Virtual public networks. *EWSDN*, pp. 1-6, doi:10.1109/EWSDN.2013.7

C. Rotsos, H. Howard, D. Sheets, R. Mortier, A. Madhavapeddy, A. Chaudhry, J. Crowcroft. Lost in the edge: Finding your way with DNSSEC Signposts. *USENIX FOCI*.

A. Madhavapeddy, R. Mortier, C. Rotsos, D. Scott, B. Singh, T. Gazagnaire, S. Smith, S. Hand, J. Crowcroft. Unikernels: Library operating systems for the cloud. *ACM ASPLOS*, pp. 461–472, doi:10.1145/2490301.2451167

2012 C. Rotsos, R. Mortier, A. Madhavapeddy, B. Singh, A.W. Moore. Cost, performance & flexibility in openflow: Pick three. *IEEE ICC*, pp. 6601-6605, doi:10.1109/ICC.2012.6364690

C. Rotsos, N. Sarrar, S. Uhlig, R. Sherwood, A.W. Moore. OFLOPS: An open framework for OpenFlow switch evaluation. *International Conference on Passive and Active Measurement*. doi:10.1007/978-3-642-28537-0_9

R. Mortier, T. Rodden, T. Lodge, D. McAuley, C. Rotsos, A. W. Moore, A. Koliousis, J. Sventek. Control and understanding: Owning your home network. *COMSNETS*, pp. 1-10, doi:10.1109/COMSNETS.2012.6151322.

2011 C. Rotsos, J. Van Gael, A.W. Moore, Z. Ghahramani. Probabilistic graphical models for semi-supervised traffic classification. *Workshop on Traffic Analysis and Characterization*, doi:10.1145/1815396.1815569

DEMOS & POSTERS

2015 C. Rotsos, G. Antichi, A. W. Moore. Enabling Performance Evaluation Beyond 10 Gbps (DEMO). *ACM SIGCOMM*, doi:10.1145/2785956.2790036.

J. H. Han, G. Antichi, N. Zilberman, C. Rotsos, A. W. Moore. An integrated environment for open-source network softwarization. *IEEE NetSoft*, doi:10.1109/NETSOFT.2015.7116167.

2014 C. Rotsos, G. Antichi, M. Bruyere, P. Owezarski, A. W. Moore. An open testing framework for next-generation OpenFlow switches (Poster). *EWSDN*, doi:10.1109/EWSDN.2014.12.

2012 A. Chaudhry, A. Madhavapeddy, C. Rotsos, R. Mortier, A. Aucinas, J. Crowcroft, S. Probst Eide, S. Hand, A. W. Moore, N, Vallina-Rodriguez. Signposts: end-to-end networking in a world of middleboxes (DEMO). *ACM SIGCOMM*, doi:10.1145/2377677.2377692.

2011 R. Mortier, B. Bedwell, K. Glover, T. Lodge, T. Rodden, C. Rotsos, A. W. Moore, A. Koliousis, J. Sventek. Supporting novel home network management interfaces with OpenFlow and NOX. *ACM SIGCOMM* , doi:10.1145/2018436.2018523.

AWARDS & HONORS

2013 Best-paper award, “Unikernels: library operating systems for the cloud”
European Network on High Performance and Embedded Architecture and Compilation.

TEACHING

UNDERGRADUATE MODULES

2017– SCC365: Advanced Networking. School of Computer and Communications.
Research-informed Y3 optional module on computer network systems (20-60 students).
Contribution: I deliver 5 lectures and lead all lab sessions. I was the module convenor between 2017-2020. I Organize invited industry talks (BT, BBC, Google).
Design & Development: I redesigned the module structure in 2017 and aligned it with the latest network research advancements. I developed a new lab and coursework framework in 2019, to improve repeatability and user-friendliness, in response to student feedback.

2016– SCC.150: Digital Systems. School of Computer and Communications.
Introductory Y1 module on Computer Architecture, Assembly programming, and debugging (150-400 students).
Contribution: I deliver all lectures between weeks 8 and 25, overlook lab organization and manage 2 STAs. I am the Module convenor since 2020.
Design & Development: I developed automated marking tools to support coursework marking and cope with student number increases. I update annually the module structure to improve student engagement and improve engagement. I developed a blended learning format for SCC.150 lectures during the COVID pandemic, to improve student online engagement.

PhD SUPERVISION

2019– P. Alcock (Part-time) - School of Computer and Communications
Multi-domain intent-based networking (Other Advisors: N. Race)

2019– A. Magzoub (Part-time) - School of Computer and Communications
Autonomic Networking: A knowledge-plane approach (Other Advisors: D. Hutchison)

2019– A. Althobaiti (thesis submission by 1/2023) - School of Computer and Communications
AI-based Energy theft detection (Other Advisors: A. Marnerides)

2019– L. Hill - School of Computer and Communications
Resilient networked systems using VNF (Other Advisors: D. Hutchison)

2018– W. Fantom (Part-time) - School of Computer and Communications
Network DevOps (Other Advisors: N. Race)

2017– A. Jung (thesis submission by 1/2023) - School of Computer and Communications
Cross-layer VM optimization (Other Advisors: D. Hutchison)

2017– N. Hart (co-Advising) - School of Computer and Communications
Programmable BGP (Other Advisors: D. Hutchison, N. Race)

MASTER SUPERVISION

2021–2022 R. Mathur, D. Pearce (MSci), A. Manzoor, W. Huang (MSc Sec)

2020–2021 E. Coterall, A. Piperides (MSci), D. Kantharow, R. Ferguson (MSc Sec)

2019–2020 J. Hymes (MSci), R. Yates (MSc Data Science)

2018–2019 N. Rutherford (MSci), A. Haseeb (MSc Data Science)

2017–2018 A. Mofet (MSc Data Science)

PHD EXAMINER

Rafael Silva Guimarães – "Cross-layer programmability for expressive and agile orchestration across heterogeneous resources", External Examiner, Universidade Federal do Espírito Santo, 06/2021.

Jon Vidler – "Non-Linear Process Communication", Internal Examiner, Lancaster University, 2/2020.

Cornelius Toh Dong Tou – "Indoor positioning using semi-supervised fingerprint building technique, based on crowd-sourced information", External Examiner. Sunway University, 3/2019.

ENGAGEMENT

CAMPUS ADMINISTRATIVE ROLES

2022– Part-I Tutor, School of Computer and Communications.
Part-I plagiarism officer. Engge with students Reps and interface them with Part-I module teaching teams.

2018–2020 Departmental committee on Wellbeing, School of Computer and Communications.
Developed the post profile. Created online resources and organized workshops on student wellbeing (exam support, coping with stress, signpost students to university services.).

2018–2021 Part-I exam office, Part-II re-sit officer.
Developed an internal exam paper moderation mechanism to improve Part-I quality assurance. Developed an SCC plan to ensure successful exam delivery, during COVID lockdowns. Developed online material and workshops on digital marking.

2018– Postgraduate Research committee member (Networking group).
I have organized annual meetings and offered research advice for more than 10 SCC PhD students.

2017–2018 LU-Goenka SCC scheme director.
Represented SCC in progression boards. Reviewed annual ATP reports and provided input to the SCC teaching committee.

CAMPUS WORKSHOPS & SHORT COURSES ORGANIZATION

2022 Welcome week lecture series: Welcome Week introduction to Part-I students. *School of Computer and Communications, Lancaster University*

2019 Student wellbeing: Lecture series on mental wellbeing for UG students. *School of Computer and Communications, Lancaster University*

2018 Networking group seminar series: Lecture series on netrwork and systems research methodologies. *School of Computer and Communications, Lancaster University*

BUSINESS COLLABORATIONS

2019– Intent-based network management and automation, *with BT*.
Collaborate with BT Digital Infrastructure and BT Global to develop several Proof-of-Concept demonstrators for network automation, based on intent-based management technologies.

2018– Wayfinder: cross-layer cloud optimization *with Unikraft*.
Develop an open platform that use AI/ML techniques to discover the optimal configuration (OS and application) for a cloud virtual machine, with minimal user input.

2018– Ukmon: lightweight network monitoring infrastructure using unikernels *with NEC Europe*.
Develop an energy-efficient service-oriented network monitoring service using unikernel-based network probes.

2017– MvCDN: Shared edge-based CDN service architecture. Infrastructures *with BT and BBC*
Design and deploy an edge-based video-delivery service for BBC live streams in the BT production network. The service is currently operational in a local telephony exchange in London and serves live BBC content to more than 100 BT customers.

PUBLIC & COMMUNITY PRESENTATIONS

2022 N. Race, **C. Rotsos**, S. Cassidy, *Spotlight on the future of networks II*. Organize an NG-CDI expo event at BT Adastral Park.

N. Race, **C. Rotsos**, S. Cassidy, *Spotlight on the future of networks*. Organized an open online event to promote the finding of the NG-CDI project to BT stakeholders.

C. Rotsos, Intent-driven network testing and monitoring. *BT Thought Leadership series on Next Generation Converged Digital Infrastructure*

C. Rotsos. Assured Automation with Network Testing & Monitoring. *Software-isation: The Challenges of Software Quality for ICT Intense Industries – Refining the Research Focus – UK5G Showcase*

2020 N. Wang, **C. Rotsos**. Intent-Based Networking. *BT Thought Leadership series on Next Generation Converged Digital Infrastructure*

2019 S. Simpson, P. Mccherry, A. Magzoub, A. Farshad, **C. Rotsos** A WIM Plugin for DataPlane Broker (DPB) (PoC Demo). *7th OSM hackfest*, Patras, Greece.

2018 **C. Rotsos**, Resilient service orchestration. *TOUCAN Industrial Schowcase* London, UK.

2015 N. Zilberman, G. Antichi, **C. Rotsos**, Open Hardware Networking - Tutorial. *SIGCOMM 2015* Imperial College London, UK.

N. Zilberman, G. Antichi, **C. Rotsos**, Open Source Networking - Tutorial. *Netsoft 2015* University College London, UK.

REVIEWER

IEEE Infocom (2020)
TPC for the European Workshop on SDN (EWSDN) (2012-2015)
TPC for the International Teletrafic Conference (2015)
IEEE Conference on Computer Communications and Networks (2015)
IEEE/ACM Transactions on Networking
Elsevier Computer Networks Journal
IEEE Communications Letters
IEEE Transactions on Network Service and Management

STANDARDIZATION

Member of the Autonomous Network group, TeleManagement Forum (TMF). Responsibilities: *Network intent modeling, network automation standardization.*

Member of the European Telecommunications Standards Institute (ETSI) Network Function Virtualization (NFV) Special Interest Group. Responsibilities: *PoC development, orchestration model design.*

OPEN-SOURCE TOOLS AND PROJECTS

2020– **Unikraft** – github.com/unikraft
A modular unikernel OS project, *Responsibilities: Maintain monitoring appliances.*

2018– **Data Plane Broker** – github.com/DataPlaneBroker
A WAN management platform, *Responsibilities: OSM Driver maintainer.*

2012– **OFLOPS** – github.com/oflops-nf/oflops-sume
A hardware OpenFlow switch benchmark platform. *Responsibilities: Core developer.*

2014–2018 **Mirage Unikernel OS** – www.mirage.org
An OCaml Unikernel OS project, *Responsibilities: OpenFlow support developer.*

OTHER INFORMATION - FEEDBACK EVALUATION

Module	2019-2020	2020-2021	2021-2022
SCC.150	3.52 (response: 8%)	3.97 (response: 16%)	3.52 (response: 10%)
SCC.365	4.30 (response: 22%)	3.86 (response: 12%)	4.00 (response: 18%)

Table 18: Overall student satisfaction and response rate for SCC.150 and SCC.365 modules for the last three academic years.