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KOSTAS CHOUMAS

GENERAL INFORMATION

First Name: Kostas (officially Konstantinos)
Last Name: Choumas
Date of Birth: 08/08/1984
Residence: Volos, Greece
Hometown: Agios Georgios Nileias, Greece
Birthtown: Drama, Greece
Nationality: Greek
Languages: Greek (Native), English (Proficient user)
Gender: Male
Military Obligations: Fulfilled

EDUCATION

- **10/2009 - 09/2015: Ph.D.** at **University of Thessaly**, Dept. of **Electrical & Computer Engineering**.
    - Thesis: '*Resource allocation in wireless ad hoc networks*', supervised by Professors Leandros Tassiulas & Thanasis Korakis.
- **09/2008 - 02/2022: 4-year Diploma Degree (BEc)** at **University of Thessaly**, Dept. of **Economics** (Grade: 8.00/10).
- **09/2007 - 06/2008: 1-year M.Sc.** in '*Telecommunications, Signals and Networks*' at **University of Thessaly**, Dept. of **Computer & Communication Engineering** (Grade: 9.69/10).
    - Thesis: '*Sharing and collaboration for efficient Internet service provisioning in wireless networks*', supervised by Professor Leandros Tassiulas.
- **09/2002 - 06/2007: 5-year Diploma Degree (B.Eng., M.Sc.)** at **University of Thessaly**, Dept. of **Computer & Communication Engineering** (Grade: 8.72/10)
    - Thesis: '*Prioritization schemes for QoS provisioning in wireless networks*', supervised by Professor Leandros Tassiulas.

- **09/1999 - 06/2002: 3-year High School studies** at **1o Lyceum of Almiros** (Grade: 19/20).

RESEARCH & WORK EXPERIENSE

- **02/2025 - PRESENT: Postdoctoral associate** with **CERTH**, Thessaloniki, Greece.
- **08/2015 - PRESENT**: **Postdoctoral associate** with **University of Thessaly**, Volos, Greece.
- **08/2014 - 07/2015:** Secondment from CERTH to **iquadrat**, Barcelona, Spain.
- **05/2014 - 07/2014**: Graduate research fellow with **University of Thessaly**, Volos & **CERTH**, Thessaloniki, Greece.
- **09/2009 - 10/2010 & 01/2011 - 05/2014:** Graduate research fellow with **CERTH**, Thessaloniki, Greece.
  - **07/2012 - 08/2012:** Internship at **NICTA**, Sydney, Australia.
- **08/2008 - 08/2009**: Mandatory military service at the Computers Department of **Greek Army**.
- **08/2003 - 09/2003:** Internship at **Intracom**, Athens, Greece.

TEACHING EXPERIENSE

- **02/2025 - 06/2025**: **Teaching Instructor** at Dept. of **Electrical & Computer Engineering** of **University of Thessaly** for the courses of IoT and Applications & Computer Networks II.
- **09/2020 - 06/2021**: **Teaching Instructor** at Dept. of **Electrical & Computer Engineering** of **University of Thessaly** for the courses of Inter-network Protocol Design, Network Optimization & Computer Networks II.
- **02/2019 - 06/2019**: **Teaching Instructor** at Dept. of **Electrical & Computer Engineering** of **University of Thessaly** for the course of Network Optimization.
- **02/2017 - 06/2019**: **Teaching Instructor** at Dept. of **Electrical & Computer Engineering** of **University of Thessaly** for the course of Computer Networks II.
- **09/2013 - 06/2017**: **Teaching Assistant** at Dept. of **Electrical & Computer Engineering** of **University of Thessaly** for the courses of Inter-network Protocol Design, Computer Networks I, Wireless Communications & Network Optimization.
- **10/2010 - 07/2011: Teaching Assistant** at Dept. of **Computer Science & Telecommunications** of former **Technological Educational Institute (T.E.I.) of Thessaly** for the course of Artificial Intelligence.
- **10/2009 - 02/2011: Teaching Instructor** at the Specialty of Web Designer/Developer of the **Institute of Vocational Training (I.E.K.)**

of Volos for the courses of Algorithms & Data Structures, Operating Systems, Computer Networks and Introduction to Information Technology.

- **02/2008 - 06/2008: Teaching Assistant** at Dept. of **Electrical & Computer Engineering** of **University of Thessaly** for the course of Scientific Computing.
- **09/2005 - 02/2006 & 09/2007 - 02/2008: Teaching Assistant** at Dept. of **Electrical & Computer Engineering** of **University of Thessaly** for the course of Linear Algebra.
- **09/2004 - 07/2009:** Rich experience on teaching Programming (C,C++,Java), Compilers & Operating Systems in private schools.

<table>
<tr><td>PUBLICATIONS</td><td></td></tr>
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JOURNALS

J1. I. Koukoulis, I. Syrigos, A. Prassas, K. Choumas and T. Korakis, **Routing Optimization Under an SDN Architecture for 802.11 MANETs**, IEEE Transactions on Network and Service Management, to be published.

J2. Y. Papageorgiou, M. Karaliopoulos, K. Choumas and I. Koutsopoulos, **Joint controller placement and TDMA scheduling in Software Defined Wireless Multihop Networks**, IEEE Transactions on Network and Service Management, vol. 22, no. 3, pp. 2807-2821, June 2025.

J3. A. Stoltidis, K. Choumas and T. Korakis, **Active queue management in 5G and beyond cellular networks using Machine Learning**, Elsevier Computer Communications, vol. 236, April 2025.

J4. K. Choumas and T. Korakis, **On using Raft over Networks: Improving Leader Election**, IEEE Transactions on Network and Service Management, vol. 19, no. 2, pp. 1129-1141, June 2022.

J5. K. Choumas, D. Giatsios, P. Flegkas and T. Korakis, **SDN Controller Placement and Switch Assignment for Low Power IoT**, MDPI Electronics, vol. 9, no. 2, article num. 325, February 2020.

J6. D. Camps-Mur et al., **5G-XHaul: A novel wireless-optical SDN transport network to support joint 5G backhaul and fronthaul services**, IEEE Communications Magazine, vol. 57, no. 7, pp. 99-105, July 2019.

J7. K. Choumas, I. Syrigos, T. Korakis and L. Tassiulas, **Video aware Multicast Opportunistic Routing over 802.11 two-hop mesh networks**, IEEE Transactions on Vehicular Technology, vol. 66, no. 9, pp. 8372-8384, September 2017.

J8. G. Paschos, L. Chih-Ping, E. Modiano, K. Choumas and T. Korakis, **In-network Congestion Control for Multirate Multicast**,

IEEE/ACM Transactions on Networking, vol. 24, no. 5, pp. 3043-3055, October 2016.

J9. K. Choumas et al., **Optimization driven Multi-Hop Network Design and Experimentation: The Approach of the FP7 Project OPNEX**, IEEE Communications Magazine, Radio Communication Series, vol. 50, no. 6, pp. 122-130, June 2012.

BOOK CHAPTERS

B1. K. Choumas et al., **Federated Experimentation Infrastructure Interconnecting Sites from Both Europe and South Korea (SmartFIRE)**, Building the Future Internet through FIRE, ch. 30, pp 717-743, River Publishers, June 2017.

INTERATIONAL CONFERENCES

C1. A. Stoltidis, K. Choumas and T. Korakis, **Performance Optimization of High-Conflict Transactions within the Hyperledger Fabric Blockchain**, Proceedings of BRAINS 2024, Berlin, Germany, October 2024.

C2. A. Stoltidis, K. Choumas and T. Korakis, **Active Queue Management in Disaggregated 5G and Beyond Cellular Networks using Machine Learning**, Proceedings of WONS 2024, Chamonix, France, January 2024.

C3. K. Choumas and T. Korakis, **When Machine Learning Meets Raft: How to Elect a Leader over a Network**, Proceedings of IEEE Globecom 2023, Kuala Lumpur, Malaysia, December 2023.

C4. S. Dimou, K. Choumas and T. Korakis, **On using Hyperledger Fabric over networks: Ordering phase improvements**, Proceedings of BlockSecSDN workshop of IEEE ICC 2023, Rome, Italy, May-June 2023.

C5. I. Syrigos, I. Koukoulis, A. Prassas, K. Choumas and T. Korakis, **On the Implementation of a Cross-Layer SDN Architecture for 802.11 MANETs**, Proceedings of IEEE ICC 2023, Rome, Italy, May-June 2023.

C6. K. Choumas and T. Korakis, **When Raft Meets SDN: How to Elect a Leader over a Network**, Proceedings of IEEE NetSoft 2020, Ghent, Belgium, June-July 2020.

C7. D. Camps, F. Canellas, A. Machwe, J. Paracuellos, K. Choumas, D. Giatsios, T. Korakis and H. R. Kouchaksaraei, **5GOS: Demonstrating multi-domain orchestration of end-to-end virtual RAN services**, Proceedings of IEEE NetSoft 2020, Ghent, Belgium, June-July 2020.

C8. M. Karatisoglou, K. Choumas and T. Korakis, **Controller Placement for Minimum Control Traffic in OpenDaylight Clustering**, Proceedings of IEEE WF-5G 2019, Dresden, Germany, September-October 2019.

C9. P. Karamichailidis, K. Choumas and T. Korakis, **Enabling Multi-Domain Orchestration using Open Source MANO, OpenStack**

and OpenDaylight, Proceedings of IEEE LANMAN 2019, Paris, France, July 2019.

C10. D. Giatsios, K. Choumas, P. Flegkas, T. Korakis, J.J. Aleixendri-Cruelles, D. Camps-Mur, **Design and Evaluation of a hierarchical SDN control plane for 5G transport networks**, Proceedings of IEEE ICC 2019, Shanghai, China, May 2019.

C11. K. Choumas, D. Giatsios, P. Flegkas, T. Korakis, **The SDN Control Plane Challenge for Minimum Control traffic: Distributed or Centralized?**, Proceedings of IEEE CCNC 2019, Las Vegas, USA, January 2019.

C12. D. Giatsios, K. Choumas, P. Flegkas, T. Korakis and D. Camps-Mur, **SDN Implementation of Slicing and Fast Failover in 5G Transport Networks**, Proceedings of IEEE EuCNC 2017, Oulu, Finland, June 2017.

C13. K. Choumas, G. Paschos, T. Korakis and L. Tassiulas, **Distributed Load Shedding with Minimum Energy**, Proceedings of IEEE INFOCOM 2016, San Francisco, CA, USA, April 2016.

C14. N. Makris, K. Choumas, C. Zarafetas, T. Korakis and L. Tassiulas, **Forging Client Mobility with OpenFlow: an experimental study**, proceedings of IEEE WCNC 2016, Doha, Qatar, 3-6 April 2016.

C15. K. Choumas, T. Korakis, H. Lee, D. Kim, J. Suh, T. Kwon, P. Martinez-Julia, A. Skarmeta, T. You, L. Baron, S. Fdida and J. Kim, **Enabling SDN Experimentation with Wired and Wireless Resources: The SmartFIRE facility**, Proceedings of EAI CloudComp 2015, Daejeon, South Korea, October 2015, (Best paper Award).

C16. K. Katsalis, K. Choumas, T. Korakis and L. Tassiulas, **Virtual 802.11 Wireless Networks with Guaranteed Throughout Sharing**, Proceedings of IEEE ISCC 2015, Larnaca, Cyprus, July 2015.

C17. K. Choumas, N. Makris, T. Korakis, L. Tassiulas and M. Ott, **Testbed Innovations for Experimenting with Wired and Wireless Software Defined Networks**, Proceedings of CNERT workshop of IEEE ICDCS 2015, Columbus, Ohio, USA, June-July 2015.

C18. K. Katsalis, K. Choumas, T. Korakis, M. Anastasopoulos, A. Tzanakaki, J. F. Riera and G. Landi, **Wireless Network Virtualization: The CONTENT Project Approach**, Proceedings of IEEE CAMAD 2014, Athens, Greece, December 2014.

C19. K. Choumas, I. Syrigos, T. Korakis and L. Tassiulas, **Video-aware Multicast Opportunistic Routing over 802.11 mesh networks**, Proceedings of IEEE SECON 2014, Singapore, Singapore, June-July 2014.

C20. H. Niavis, K. Choumas, G. Iosifidis, T. Korakis and L. Tassiulas, **Auction-based Scheduling of Wireless Testbed Resources**, Proceedings of IEEE WCNC 2014, Instanbul, Turkey, April 2014.

C21. G. Paschos, C. Li, E. Modiano, K. Choumas and T. Korakis, **Multirate Multicast: Optimal Algorithms and Implementation**,

Proceedings of IEEE INFOCOM 2014, Toronto, Canada, April 2014.

C22. K. Choumas, N. Makris, T. Korakis, and L. Tassiulas, **Exploiting OpenFlow resources towards a Content-Centric LAN**, Proceedings of IEEE EWSDN 2013, Berlin, Germany, October 2013.

C23. A. Apostolaras, K. Choumas, I. Syrigos, I. Koutsopoulos, T. Korakis, A.Argyriou and L. Tassiulas, **On the Implementation of Relay Selection Strategies for a Cooperative Diamond Network**, Proceedings of IEEE PIMRC 2013, London, UK, September 2013.

C24. K. Choumas, T. Korakis, I. Koutsopoulos and L. Tassiulas, **Implementation and End-to-end Throughput Evaluation of an IEEE 802.11 compliant version of the Enhanced-Backpressure algorithm**, Proceedings of EAI TridentCom 2012, Thessaloniki, Greece, June 2012.

C25. K. Choumas, T. Korakis and L. Tassiulas, **New Prioritization Schemes for QoS provisioning in 802.11 Wireless Networks**, Proceedings of IEEE LANMAN 2008, Cluj-Napoca, Romania, September 2008, (invited paper).

DEMOS / POSTERS

D1. S. Dimou, K. Choumas and T. Korakis, **On Using Blockchain in beyond 5G: Roaming Improvements**, Proceedings of BRAINS 2024, Berlin, Germany, October 2024.

D2. P. Karamichailidis, K. Choumas and T. Korakis, **OpenFlow enabled Integrated Routing and Bridging over Ethernet Virtual Private Networks**, Proceedings of IEEE/IFIP NOMS 2020, Budapest, Hungary, April 2020.

D3. N. Makris, C. Zarafetas, K. Choumas, P. Flegkas and T. Korakis, **Virtualized Heterogeneous 5G Cloud-RAN deployment over Redundant Wireless Links**, Proceedings of IEEE LANMAN 2019, Paris, France, July 2019.

D4. P. Karamichailidis, K. Choumas and T. Korakis, **Demonstrating Multi-Domain Orchestration through Open Source MANO, OpenStack and OpenDaylight**, Proceedings of IEEE NetSoft 2019, Paris, France, June 2019.

D5. I. Syrigos, K. Choumas, T. Korakis and L. Tassiulas, **Demonstration of a Video-aware Multicast Opportunistic Routing protocol over 802.11 two-hop mesh networks**, Proceedings of IEEE SECON 2014, Singapore, Singapore, July 2014.

D6. G. Paschos, C. Li, E. Modiano, K. Choumas and T. Korakis, **A Demonstration of Multirate Multicast Over an 802.11 Mesh Network**, Proceedings of IEEE INFOCOM 2014, Toronto, Canada, April 2014.

D7. K. Choumas, T. Korakis, I. Koutsopoulos and L. Tassiulas, **A Demonstration of Video over an IEEE 802.11 compliant version**

of the Enhanced-Backpressure algorithm, Proceedings of EAI TridentCom 2012, Thessaloniki, Greece, June 2012.

D8. D. Giatsios, K. Choumas, D. Syrivelis, T. Korakis and L. Tassiulas, **Integrating FlowVisor access control in a publicly available OpenFlow testbed with slicing support**, Proceedings of EAI TridentCom 2012, Thessaloniki, Greece, June 2012.

D9. A. Apostolaras, K. Choumas, I. Syrigos, G. Kazdaridis, T. Korakis, I. Koutsopoulos, A. Argyriou and L. Tassiulas, **A Demonstration of a Relaying Selection Scheme for Maximizing A Diamond Network's Throughput**, Proceedings of EAI TridentCom 2012, Thessaloniki, Greece, June 2012.

D10. K. Choumas, T. Korakis and L. Tassiulas, **A Demonstration of Video over a User Centric Prioritization Scheme for Wireless LANs**, Proceedings of IEEE SECON 2008, San Francisco, California USA, June 2008.

<div style="float:left">HONORS</div>

- **05/2018 - 07/2019: Scholarship for research on 5G networks** given through the "Supporting researchers with emphasis on new researchers" call for proposals (EΔBM 34) of the Operational Program "**Human Resources Development, Education and Lifelong Learning 2014-2020**".
- **10/2015: Best paper award** in CloudComp 2015.
- **07/2008 & 07/2010:** Full Grant to attend the summer schools powered by **Onassis Foundation Science Lecture Series**.
- **09/2007 - 06/2008:** Scholarship for the M.Sc. studies given by **European Operational Programme "Education" (ΕΠΕΑΕΚ ΙΙ)**, since I was ranked 1st in my class.
- **09/2002 - 06/2007:** Scholarships and awards for the Diploma studies given by **Greek State Scholarships Foundation (IKY)** and **Technical Chamber of Greece (TEE)**, since I was ranked 1st in my class.

<div style="float:left">SUMMER SCHOOLS</div>

- **07/2010**: **"Network and Information Security"** in Heraklion, Greece, powered by Onassis Foundation Science Lecture Series.
- **07/2008**: **"Embedded networked Systems: Theory and Applications"** in Heraklion, Greece, powered by Onassis Foundation Science Lecture Series.
- **09/2006: "Advances in Beyond 3G Wireless Communications and Networks"** in Santorini, Greece, powered by NEWCOM and CERTH.

<div style="float:left">REFERRALS</div>

- Professor **Thanasis Korakis,** University of Thessaly, Greece (korakis@uth.gr)
- Professor **Leandros Tassiulas,** Yale University, USA (leandros.tassiulas@yale.edu)