

Christos Karapapas, Ph.D.

✉ karapapas.c@unic.ac.cy

📧 @ckarapapas

🌐 Christos Karapapas

🎓 Citations: 191, h-index: 6

Research Interests

- 📌 Computer Systems Security, Cryptography, Blockchain Technologies & Decentralized Systems, Malware Analysis, Information Hiding / Steganography.

Education

- 2016 – 2025 📌 **Ph.D., Athens University of Economics and Business.**
Thesis title: *Navigating Security and Privacy Challenges in the Web3 Ecosystem: Analyzing Blockchains, IPFS, and Decentralized Applications*,
- 2013 – 2016 📌 **M.Sc. Information Systems, Athens University of Economics and Business** in Computer Security.
Thesis title: *Broadcast Encryption*.
- 2004 – 2013 📌 **B.Sc. Mathematics, University of Athens** in Applied Mathematics.

Research Publications

Journal Articles

- 1 I. Pittaras, N. Fotiou, **C. Karapapas**, V. A. Siris, and G. C. Polyzos, “Secure smart contract-based digital twins for the internet of things,” *Blockchain: Research and Applications*, vol. 5, no. 1, p. 100–168, 2024, ISSN: 2096-7209. 🔗 DOI: <https://doi.org/10.1016/j.bcr.2023.100168>.

Conference Proceedings

- 1 **C. Karapapas**, I. Pittaras, G. C. Polyzos, and C. Patsakis, “Towards Probabilistic Semantic Assurance in Decentralized Data Exchange,” in *2026 8th Conference on Blockchain Research & Applications for Innovative Networks and Services (BRAINS)*, IEEE, 2026.
- 2 **C. Karapapas**, I. Pittaras, G. C. Polyzos, and C. Patsakis, “Hello, won’t you tell me your name?: Investigating Anonymity Abuse in IPFS,” in *International Conference on Availability, Reliability and Security*, Springer, 2025, pp. 187–204.
- 3 **C. Karapapas**, G. Xylomenos, and G. C. Polyzos, “Enhancing IPFS Bitswap,” in *International Conference on Information and Communication Technology for Intelligent Systems*, Springer, 2024, pp. 189–199.
- 4 T. Katsantas, Y. Thomas, **C. Karapapas**, and G. Xylomenos, “Enhancing IPFS privacy through triple hashing,” in *2024 IEEE Symposium on Computers and Communications (ISCC)*, IEEE, 2024, pp. 1–6.
- 5 **C. Karapapas**, G. C. Polyzos, and C. Patsakis, “What’s inside a node? Malicious IPFS nodes under the magnifying glass,” in *IFIP International Conference on ICT Systems Security and Privacy Protection*, Springer, 2023, pp. 149–162.
- 6 **C. Karapapas**, G. Syros, I. Pittaras, and G. C. Polyzos, “Decentralized NFT-based Evolvable Games,” in *2022 4th Conference on Blockchain Research & Applications for Innovative Networks and Services (BRAINS)*, IEEE, 2022, pp. 67–74.
- 7 I. Pittaras, N. Fotiou, **C. Karapapas**, V. A. Siris, and G. C. Polyzos, “Secure, mass web of things actuation using smart contracts-based digital twins,” in *2022 IEEE Symposium on Computers and Communications (ISCC)*, IEEE, 2022, pp. 1–6.

- 8 **C. Karapapas**, I. Pittaras, and G. C. Polyzos, “Fully Decentralized Trading Games with Evolvable Characters using NFTs and IPFS,” in *2021 IFIP Networking Conference (IFIP Networking)*, IEEE, 2021, pp. 1–2.
- 9 **C. Karapapas**, I. Pittaras, N. Fotiou, and G. C. Polyzos, “Ransomware as a Service using smart contracts and IPFS,” in *2020 IEEE International Conference on Blockchain and Cryptocurrency (ICBC)*, IEEE, 2020, pp. 1–5.

Teaching Experience

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| Fall 2017–2019 | ■ Teaching Assistant , Undergraduate Course “Discrete Mathematics”, Dept. of Informatics (Instructor: Prof. P. Katerinis). Delivered recitations & tutorial sessions (Student evaluation: 4.62/5.00). |
| Fall 2019–2025 | ■ Teaching Assistant , Undergraduate Course “Discrete Mathematics”, Dept. of Informatics (Instructor: Prof. P. Katerinis). Evaluated and graded student assignments. |
| Spring 2018–2024 | ■ Teaching Assistant , Undergraduate Course “Probability”, Dept. of Informatics (Instructor: Prof. S. Toumpis). Evaluated and graded student assignments. |
| Fall 2026–Present | ■ Adjunct Lecturer , Undergraduate Course “Calculus I”, Dept. of Computer Science, University of Nicosia Athens |
| | ■ Adjunct Lecturer , Undergraduate Course “Mathematics and Logic for Computation”, Dept. of Computer Science, University of Nicosia Athens |

Research Projects

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| 2026 – Present | ■ SafeHorizon: Innovations in Detecting and Disrupting Crime-as-a-Service Operations
<i>Funding Agency: European Union (EU Horizon Europe)</i> |
| 2020 | ■ Multi Level DHT Design and Evaluation for IPFS (MLDHT)
<i>Funding Agency: Protocol Labs</i> |

Academic Service

Conferences

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| 2026 | ■ BLOCKCHAIN '26 : 8th International Congress on Blockchain and Applications – <i>Technical Program Committee (TPC) Member</i> |
| 2025 | ■ BLOCKCHAIN '25 : 7th International Congress on Blockchain and Applications – <i>Technical Program Committee (TPC) Member</i> |
| 2024 | ■ EuroSys 2024 : 19th European Conference on Computer Systems – <i>Student Volunteer</i> |
| | ■ BLOCKCHAIN '24 : 6th International Congress on Blockchain and Applications – <i>Technical Program Committee (TPC) Member</i> |
| 2023 | ■ B2C '23 : Blockchain & Cryptocurrency Conference – <i>Technical Program Committee (TPC) Member</i> |
| | ■ BLOCKCHAIN '23 : 5th International Congress on Blockchain and Applications – <i>Technical Program Committee (TPC) Member</i> |
| 2022 | ■ B2C '22 : Blockchain & Cryptocurrency Conference – <i>Technical Program Committee (TPC) Member</i> |
| | ■ BLOCKCHAIN '22 : 4th International Congress on Blockchain and Applications – <i>Technical Program Committee (TPC) Member</i> |

Academic Service (continued)

- 2021  **BLOCKCHAIN '21:** 3rd International Congress on Blockchain and Applications – *Technical Program Committee (TPC) Member*

Journals

- 2022 – Present  **Multimedia Tools and Applications**, Springer – *Invited Peer Reviewer*
Blockchain: Research and Applications, Elsevier – *Invited Peer Reviewer*
Computer Communications, Elsevier – *Invited Peer Reviewer*
Journal of Systems Architecture, Elsevier – *Invited Peer Reviewer*

Miscellaneous Experience

Awards and Achievements

- 2015  **Awarded honorary plaque by the Commander of the Simulator Center (KEX)** for developing an application for the Leopard A2 simulator, Alexandroupoli.
- 2012  **Full scholarship recipient** for attending summer-school titled "A Panorama of Modern Number Theory with Applications to Cryptography and Coding" in University of Göttingen, Germany
- 2004  **Distinction in the Greek National Student Informatics Competition.**

Skills

- Languages  **English:** Proficient (C2) – Michigan Certificate of Proficiency in English (CPE)
German: Intermediate (B1) – Zertifikat Deutsch Goethe Institut
- Coding  Python, Go, $\LaTeX$.
- Misc.  Academic research and teaching.