Christina Karakosta

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ckarakosta.github.io | github.com/ckarakosta

EDUCATION

PhD in Computing Research, Department of Computing, Imperial College London   2020 - 2025
"Privacy-Preserving Information Sharing in Decentralized Environments" - Splunk PhD Scholar
Supervisor: *Prof William J. Knottenbelt*
Planned thesis submission: Dec 2025

- Privacy-Preserving Machine Learning (PPML) for unique identification on biometric data
- Distributed Federated Learning using Privacy-Enhancing Technologies (PETs)
- Privacy-Preserving Data Sharing Frameworks using PETs: Fully Homomorphic Encryption (FHE), Secure Multi-Party Computation (MPC), Zero-Knowledge Proofs (ZKP), and Differential Privacy (DP)

MSc in Applied Economics & Data Analysis, University of Patras, Greece   2017 - 2018

- Thesis: *"Trust Issues in Sharing Economy: A study based on Sentiment Analysis in Social Networks"* - Grade: 10/10
  Supervisors: *Prof Manolis Tzagarakis* & *Dr Victoria Daskalou*
  Twitter data of Airbnb and Uber reviews for Sentiment Analysis using Machnine Learning and NLP tools
- Applied Micro-econometrics; Applied Macro-econometrics; *Managing Big Data*; Special Topics in Business Economics; Special Topics in Finance; Business Financial Analysis; (Python, R, Stata, Gretl, Excel, LaTeX)

BSc in Economics, School of Business Administration, University of Patras, Greece   2013 - 2017

- *Economic theory (Microeconomics, Macroeconomics); Quantitive methods (Mathematics, Statistics, Econometrics); Finance and Business; Applied Economics; Economic History & Law; Information Systems & Digital Economy*

Erasmus+ Studies (6-month), John von Neumann University, Hungary   2016

- Finance; Fundamentals of Company Management; International Marketing; Global Economic Trends; Introduction to Hungarian Language

WORK EXPERIENCE / RESEARCH

Research Engineer (full-time), *Toshiba Research Europe Limited*,   2023 - 2024
Bristol Research and Innovation Laboratory (BRIL), UK

- IoT and Data Sharing Platforms: Decentralized privacy-preserving data sharing solutions

Graduate Teaching Assistant, Imperial College London, UK   2020 - 2023

- Courses: Cryptography Engineering; Introduction to Machine Learning; Natural Language Processing (NLP); Principles of Finance (Imperial College Business School)
- Run live and demo sessions; coursework marking and feedback; tutorial preparation; MSc students lab support
- Exams invigilation

Consultant - Software Engineer, *iCaravel* in collaboration with *Imperial Consultants*, UK   2021 - 2022

- Proof of Concept (POC) for Seismic Data Entitlement in the Oil & Gas industry through the development of digital solutions based on blockchain, smart contract, and ZKP technologies

Consultant - Data Scientist, International Tennis Federation and Imperial College London, UK   2020 - 2022

- *World Tennis Number (WTN)* project aiming to optimize score alignment by improving player rankings
- Exploratory data analysis on large real-world tennis data for optimizing rating algorithms

Research Assistant, University College London (UCL), UK   2018 - 2019

- *"Reputation, Trust, and Privacy in Sharing Economy: A Network Science Approach"* (Erasmus+ Traineeship)
  Supervisor: *Dr Giacomo Livan, Senior Research Fellow - Financial Computing & Analytics Group.*
- Sentiment Analysis and Regression Analysis of multivariate social media data on Sharing Economy
- Aspect-Based Sentiment Analysis: strong positive correlation between sentiment and Airbnb price predictions

Insurance and Financial Advisor Intern (3-month), "Michalatos & Associates" Insurance Office, affiliate of Mega Brokers, Patras, Greece.

2017

- Awarded internship among top BSc students; Target group analysis; Pricing of customer contracts; Consultancy of alternative electricity providers; Risk management plans; Market research and competitive analysis

CERTIFICATIONS

Professional Certification for **Developing Blockchain-Based Identity Applications Record** - The Linux Foundation - Introduction to Hyperledger Self-Sovereign Identity Blockchain Solutions - Becoming a Hyperledger Aries Developer	Aug 2024
The Complete FastAPI Course With OAuth & JWT Authentication - Udemy	Mar 2022
Introduction to Cybersecurity Tools & Cyber Attacks authorized by *IBM* - Coursera	Dec 2020
Introduction to Cybersecurity for Business authorized by *University of Colorado* - Coursera	Dec 2020
Cybersecurity in Healthcare (Hospitals & Care Centres) authorized by *Erasmus University Rotterdam* - Coursera	Nov 2020

CONFERENCES ATTENDANCE / TALKS (Selected)

MARBLE 2024, **5th International Conference on Mathematical Research for Blockchain Economy**, Malaga, Spain	July 2024
PETS 2023, **23rd Privacy Enhancing Technologies Symposium**, Lausanne, Switzerland	July 2023
Breaking the code: Women in Computing Imperial x Kings: Presentation and talk at the Female PhD Research Panel, London, UK	Mar 2023
IPFS-Thing 2023, **InterPlanetary File System Thing**, Brussels, Belgium	Mar 2023
MARBLE 2022 , **3rd International Conference on Mathematical Research for Blockchain Economy**, Vilamoura, Portugal	July 2022
S&P 2022 , **43rd IEEE Symposium on Security and Privacy**, San Francisco, CA	May 2022
PETS 2021, **21st Privacy Enhancing Technologies Symposium**, Virtual Attendance	July 2021
WEIS 2020, **20th Annual Workshop on the Economics of Information Security**, Brussels (Virtual)	Dec 2020
NeurIPS, **Thirty-fourth Conference on Neural Information Processing Systems**, US (Virtual)	Dec 2020

TECHNICAL SKILLS AND LANGUAGES

Programming Languages: Python (expert), R, SQL, C++, JavaScript, Rust, Java, Solidity

Cryptographic libraries: OpenSSL, Crypto++, Hashlib, PyCrypto, PySyft, SEAL, ZoKrates

Python libraries: Pandas, NumPy, Matplotlib, Scikit-learn, TensorFlow, PyTorch, SQLAlchemy, NLTK, etc.

Software/Statistical tools: Stata, Gretl, IBM SPSS Statistics, EViews, LaTeX

Microsoft Office: Excel, Word, PowerPoint

Languages: Greek (native) ; English (fluent)

DISTINCTIONS AND AWARDS

2023 PETS Scholar, Lausanne, Switzerland	July 2023
2023 IPFS Thing Scholar, Brussels, Belgium	Apr 2023
2022 IEEE S&P Student Travel Grant, *43rd IEEE Symposium on Security and Privacy*, San Francisco	Apr 2022
Splunk PhD Scholar: 3-year fully PhD fund, *Computing Research, Imperial College London*, UK	Oct 2020
Granting a full-tuition Scholarship to the Master's degree, *MSc Applied Economics & Data Analysis, Department of Economics, University of Patras*, Greece	Oct 2017
BIC BUSINESS TALENTS competition. Diploma for *Praxis MMT* simulator to manage a company - Finals (2017) 18th position among 815 teams; Semi-finals (2016)	2016 - 2017

VOLUNTEER EXPERIENCE

5th Patras IQ, MSc Student Volunteer, *Innovation & Knowledge Transfer Exhibition - Patras lnnovation Quest (PATRAS IQ)*, Patras, Greece	Apr 2018

References available upon request