

# José Cabrero Holgueras

Email: jose@cabreroholgueras.com

Github: github.com/jcabrero

LinkedIn: linkedin.com/jose-cabrero-holgueras

Tlf: +34 617 762 573

Full CV: jcabrero.github.io/cv.pdf



## EXPERIENCE

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- **Research Assistant for CYNAMMON Project** Madrid, Spain  
*COSEC group, Computer Engineering Department, Universidad Carlos III de Madrid.* Feb. 2023 – Apr. 2023
  - **Compiler-aided tools for Levelled Homomorphic Encryption:** Improvement of library with 80% reduction in lines of code for Homomorphic Encryption Code
- **CERN Doctoral Student Programme** Geneva, Switzerland  
*CERN, IT Department, CERN Openlab* Nov. 2019 – Oct. 2022
  - **Privacy-Preserving Technologies for Deep Learning:** Improvement of vectorized algorithms for Homomorphic Encryption-based Deep Learning. Development of computer-aided parametrization based on Expert Systems. Participation in the *Living Lab* Initiative and *Quantumacy* European Projects for Privacy-Preserving Post-Quantum Data Processing.
- **CERN Summer Student Programme** Geneva, Switzerland  
*CERN, Experimental Physics Group, Detector Technologies Department (EP-DT-DD)* Jun. 2018 – Sep. 2018
  - **Development of a Readout and Management System for Radiation Detection Sensors.:** Development of data collection embedded web server with graphing application on a Arduino YUN IoT device.
- **Research Assistant for C++ 20 Contract Specification Development** Madrid, Spain  
*ARCOS group, Computer Engineering Department, Universidad Carlos III de Madrid.* Sep. 2017 – Jun. 2018
  - **Support for Contract-Based Programming on the Clang compiler:** Implementation of the C++ Standard P0542R5 specification. Building proofs of concept of the different features. Testing and performance evaluation.

## EDUCATION

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- **Ph.D. in Computer Science and Technology** Madrid, Spain  
*Universidad Carlos III de Madrid* Nov. 2019 – (Expected) Apr. 2023
  - **Privacy-Preserving Computation Techniques for Deep Learning:** Improving adaptability of Homomorphic Encryption for Deep Learning. Federated Learning and Secure Multiparty Computation for Healthcare. Supervisor: Sergio Pastrana
- **M.Sc. in Cybersecurity** Madrid, Spain  
*Universidad Carlos III de Madrid; Major in Cybersecurity* Sep. 2018 – Jul. 2019
- **B.Sc. in Computer Science and Engineering** Madrid, Spain  
*Universidad Carlos III de Madrid; Minor in Computer Engineering; EUR-ACE Label.* Sep. 2014 – Jul. 2018

## SKILLS

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- **Programming Languages:** Proficient: Python and Golang. Others: C++, Bash, SQL, Javascript and LaTeX.
- **Cryptography Techniques:** Homomorphic Encryption, Secure Multiparty Computation, Federated Learning.
- **Distributed Systems and Computer Networks:** Sockets, RPC and GRPC, REST Microservices.
- **System Administration:** Docker, Git, Ansible, Kubernetes and embedded systems: Raspberry Pi and Arduino.
- **Deep Learning Frameworks:** Tensorflow, Keras, NumPy, ScikitLearn and various online Coursera courses.
- **Deep Learning Specialization Coursera deeplearning.ai :** Machine Learning Stanford University Online, Neural Networks and Deep Learning, Improving Deep Neural Networks: Hyperparameter tuning and Optimization, Structuring Machine Learning Projects, Convolutional Neural Networks, and Sequence Models.

## PUBLICATIONS

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- **Cabrero-Holgueras, J., & Pastrana, S. (2021).** A Methodology For Large-Scale Identification of Related Accounts in Underground Forums. *Computers & Security*, 111, 102489.
- **Cabrero-Holgueras, J., & Pastrana, S. (2021).** SoK: Privacy-preserving computation techniques for deep learning. *Proceedings on Privacy Enhancing Technologies*, 2021(4), 139-162.

## AWARDS

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- **Best Extended Abstract at Italian Congress for Telemedicine Society:** Usable Homomorphic Encryption for Private Telemedicine on the Cloud. October 2021.
- **Random Power Hackathon First Prize:** Project: True Random Privacy; Denoising of images applied to Quantum Random Differential Privacy. October 28–30, 2020.
- **Best Student of the Year M.Sc. in Cybersecurity:** Universidad Carlos III de Madrid. Award to the students with the best GPA of each Master Course Degree. 2018/2019
- **CERN Summer Student Webfest Hackathon Winner:** Second prize, App: “Guess what particle”, (source code: [gitlab.cern.ch/jcabrero/whoiswho](https://gitlab.cern.ch/jcabrero/whoiswho)); Geneva, Switzerland, July 27–29, 2018.
- **Excellence Scholarship:** Community of Madrid, to facilitate the development of university education of students with an excellent academic achievement, 2017/2018.

## LANGUAGES

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- **Spanish:** Native.
- **English:** Advanced or Professional Competencies (C1).
- **French:** Upper-Intermediate (B1).

## INTERESTS

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- **Hobbies:** Cuisine, Social Events, Sports (soccer and padel), Videogames, Travelling and Home Labbing.