

# Liana Valdes

Doctorate in Computer Science.  
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## EDUCATION

### Florida International University

*Doctor of Philosophy in Computer Science*  
*Advisor: Eminent Scholar Chaired Professor Raju Rangaswami.*

21 August 2017 - 16 December 2023

GPA: 3.83/4

### Florida International University

*Master of Science in Computer Science*

21 August 2017 - 17 December 2022

GPA: 3.83/4

### Technological University of Havana “José Antonio Echeverría”

*Bachelor of Science in Telecommunications and Electronics Engineering*  
*Faculty of Telecommunications Engineering*

1 September 2009 - 20 July 2014

Havana, Cuba

GPA: 4.48/5

## EXPERIENCE

### Graduate Research Assistant/GAANN Fellowship | Florida International University, FL, USA

August 2017 - December 2023

- Developed LeCaR and CACHEUS (94.38% hit rate), ML systems for cache replacement, and CaaS, a novel distributed caching system.

### Research Intern | Seagate Technology, Remote, USA

August 2021 - December 2021

- Tested the CORTX's software stack, the File Data Manipulation Interface (FDMI), and conducted a performance study on Moiré storage.

### Research Intern | Microsoft Research (MSR), Cambridge, England, UK

January 2020 - March 2020

- Developed ML systems using DL and Unsupervised Learning to identify anomalies when tested using image data from the movie “Superman”.

### Telematics Specialist B | Cuban Telecommunications Company S.A., Havana, Cuba

September 2015 - June 2016

- Maintained uninterrupted communication services on IT infrastructures.

### Research Intern/Apprenticeship | Cuban Radio and Television Broadcasting Company, Havana, Cuba

March 2012 - July 2014

- Analyzed the board layout to modify the UHF and VHF communication modules from the PAL television standard to NTSC.

## RESEARCH PROJECTS

### Extending storage systems to meet cloud needs | Seagate Technology & SyLab (FIU)

August 2021 - Present

- Designed TxFuse, a novel architecture, to extend a distributed storage system with plugins and improve performance and efficiency.
- Developed transactional coupling and reliable notification techniques to implement storage features such as encryption and compression.

### A distributed cache for cloud data centers | SyLab, ModLab, DAMRL (FIU) & HASLab (UMinho) May 2020 - Present

- Developed CaaS, a novel, distributed, and generalized cache for cloud computing infrastructures, and novel QoS algorithms.
- Improved hit rates, data center services, and microservices with a distributed cache that unifies cache resources for reading and writing.

### ML systems for caches in the cloud | SyLab, ModLab, BioRG (FIU) & VISA (ASU)

August 2018 - February 2021

- Developed ML algorithms LeCaR and CACHEUS to improve cache hit rates compared to classic cache replacement algorithms for the cloud.

## HONORS & AWARDS

USENIX Student Travel Award, FAST'18 & FAST'19 & FAST'23.  
GAANN Fellowship from the ED, 2022 and 2023.  
CMD-IT/ACM Richard Tapia Celebration of Diversity, 2022 and 2024.  
Grace Hooper Celebration of Women in Computing, 2019 and 2022.  
USENIX SREcon24 Europe/Middle East/Africa Award, 2024.

## Skills

Cache, Storage Systems, ML, RL, DL, SL, Unsupervised Learning, AI, Distributed Systems, Python, C#, C, C++, Java, Go, R, R++, VS Code, TeX, VB, HLA, TensorFlow, PyTorch, Scikit-learn, Docker, GitLab, Team Leadership, Distributed caching, QoS algorithms.

## PUBLICATIONS

### Project Silica: Towards Sustainable Cloud Archival Storage in Glass

October 2023

Liana Valdes, in Acknowledgement, The 29th ACM Symposium on Operating Systems Principles, SOSP'23.

### Infusing Pub-Sub Storage with Transactions

July 2022

The 14th ACM Workshop on Hot Topics in Storage and File Systems, HotStorage'22.

### Unifying the Data Center Caching Layer - Feasible? Profitable?

July 2021

The 13th ACM Workshop on Hot Topics in Storage and File Systems, HotStorage'21.

### Learning Cache Replacement with CACHEUS

February 2021

19th USENIX Conference on File and Storage Technologies, FAST'21.

### Driving Cache Replacement with ML-Based LeCaR

July 2018

10th USENIX Workshop on Hot Topics in Storage and File Systems, HotStorage'18.