

# Liana Valdes

Doctorate in Computer Science.  
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## EDUCATION

### Florida International University

21 August 2017 - 16 December 2023

*Doctor of Philosophy in Computer Science*

GPA: 3.83/4

*Advisor: Eminent Scholar Chaired Professor Raju Rangaswami.*

*Relevant courses: Analysis of Algorithms, Introduction to Algorithms, Advanced Software Engineering.*

### Florida International University

21 August 2017 - 17 December 2022

*Master of Science in Computer Science*

GPA: 3.83/4

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

1 September 2009 - 20 July 2014

*Bachelor of Science in Telecommunications and Electronics Engineering*

Havana, Cuba

*Faculty of Telecommunications Engineering*

GPA: 4.48/5

## EXPERIENCE

**Graduate Research Assistant/Teaching 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, CaaS, a novel distributed caching, and TxFuse.

**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

- Designed and implemented CaaS, a novel, distributed, and generalized cache for cloud computing infrastructures using 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 Hopper Celebration of Women in Computing, 2019 and 2022.

USENIX SREcon24 Europe/Middle East/Africa Award, 2024.

Reviewer nationwide for ACM Transactions on Storage (TOS),

## 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, CompTIA A+, Agile methodologies, Version Control (Git), GitHub.

## 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.