

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.

Relevant courses: Analysis of Algorithms, Introduction to Algorithms, Advanced Software Engineering, Database Management Systems, Introduction to Machine Learning, Data Visualization.

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/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 analysis on Motr 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) '21, '25

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.