

Liana Valdes

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EDUCATION

Florida International University

Doctor of Philosophy in Computer Science

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 Electronics and Telecommunications Engineering

Faculty of Telecommunications Engineering

1 September 2009 - 28 July 2014

Havana, Cuba

GPA: 4.48/5

RESEARCH PROJECTS

Extending storage systems to meet the needs of cloud architectures | Seagate Technology & SyLab (FIU) August 2021

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

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

- Improved hit rates, data center services, and microservices with a distributed cache that unified resources for reads and writes.
- Developed CaaS, a novel, distributed, and generalized cache for cloud computing infrastructures.

ML systems for optimality analysis of cache replacement | SyLab, ModLab & BioRG (FIU) August 2019

- Developed ML models and systems to improve the performance of cache replacement algorithms.
- Analyzed the optimality of cache replacement algorithms for systems in the cloud.

ML systems for caches in the cloud | SyLab, ModLab, BioRG (FIU) & VISA (ASU) August 2018

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

EXPERIENCE

Team Leader | Florida International University, FL, USA

August 2018 - December 2023

- Communicated team objectives, generated ideas, defined problems, and created and implemented team plans.

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, California, USA

August 2021 - December 2021

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

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

January 2020 - March 2020

- Developed ML systems to identify anomalies when tested using data from the Warner Bros. movie “Superman” written on glass.

Telematics Specialist B | Cuban Telecommunications Company (ETECSA), Havana, Cuba

September 2015 - June 2016

- Maintained uninterrupted communication services for the computing infrastructures such as the cloud.

Research Intern/Apprenticeship | Cuban Radiocommunications Company (RadioCuba), Havana, Cuba

March 2012 - July 2014

- Modified changes in the Ultra High Frequency (UHF) communication module board layout.

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

Machine Learning, Reinforcement Learning, Deep Learning, Storage, Supervised Learning, Unsupervised Learning, AI, Cache Replacement, Distributed Systems, Python, C#, C, C++, Java, Go, R, R++, TeX, VB, HLA, TensorFlow, Pytorch, Scikit-learn, Docker, GitLab, VS Code.

PUBLICATIONS

Project Silica: Towards Sustainable Cloud Archival Storage in Glass

October 2023

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.