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

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 - 28 July 2014**
Bachelor of Science in Telecommunications and Electronics Engineering — Havana, Cuba
Faculty of Telecommunications Engineering — 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 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 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 PAL to NTSC television standards.*

Research Projects

Extending storage systems to meet cloud needs | 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 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.*

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, 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.

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.