Liana Valdes

Doctorate in Computer Science.
Knight Foundation School of Computing and Information Sciences.
Florida International University (FIU).
Miami, FL.

Mobile: +1-786-665-5542
Email: lvald108@fiu.edu, lianavaldesrdguez@gmail.com
Web: https://lvald.netlify.app/ , GitHub: https://github.com/lia54
LinkedIn: https://linkedin.com/in/liana-valdes/

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.

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/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 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, LLM, 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.