Liana Valdes

Ph.D. Candidate
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Florida International University
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Research Interests

Distributed Systems, Storage Systems, Machine Learning in Systems and Operating Systems

Education

Florida International University
Miami, FL

Ph.D in Computer Science — *Aug. 2017 – Present*

Advisor: Raju Rangaswami — GPA 3.83/4.0

Technological University, CUJAE
Hav, Cuba

BS in Telecommunications and Electronics — *Sep. 2009 – Jun. 2014*

College of Engineering — GPA 3.58/4.0

Research Projects

Cache Replacement Algorithms | Systems Research Laboratory *Sylab* — Aug. 2017 – Present
- Designed and developed novel caching algorithms for a wide variety of production workloads.
- Incorporated new design insights in caching algorithms to reduce the number of writes in SSD caches.

Distributed caching | Systems Research Laboratory *Sylab* — Aug. 2017 – Present
- Designed and developed a new distributed and persistent caching layer for cloud data centers.
- Implement new replication and recovery protocols to ensure fault-tolerance and availability.

Publications & Presentations

Driving Cache Replacement with ML-Based LeCaR | **HotStorage'18**   Jul. 2018

Giusseppe Vietri, *Liana V. Rodriguez*, Wendy A. Martinez, Steven Lyons, Jason Liu, Raju Rangaswami, Ming Zhao, and Giri Narasimhan, USENIX Workshop on Hot Topics in Storage and File Systems

Experience

Graduate Research Assistant
Aug. 2017 – Present

Florida International University — *Miami, FL*

Systems Research Laboratory | Sylab
- Developed new caching algorithms for storage caches using Machine Learning techniques to improve performance.
- Analyzed real-world storage workloads to identify patterns that can be exploited by caching algorithms.
- Distributed systems research that addresses challenges such as consistency, availability and fault-tolerance.

Research Intern
Jan. 2020 – Mar. 2020

Microsoft Research — *Cambridge, England, UK*
- Worked as part of Project Silica, a multidisciplinary project that aims to develop from ground up the entire storage stack for a new class of storage system in the cloud data centers that is based on glass.
- My research was focused on using Deep Learning techniques as part of the software pipeline that works on improving data retrieval and the analysis of errors in the system.

Junior Network Engineer
Oct. 2014 – Jun. 2015

ETECSA Cuban Telecommunication Company — *Hav, Cuba*
- Worked as part of the Operation department that monitors all aspects of ATM, DSLAM, DSL and PSTN network/system infrastructure to ensure high network reliability.
- Performed current network assessment in my district to enable the deployment of OTN devices for the EPON/GPON fiber-to-home project.

Research Intern   Mar. 2012 – Jul. 2014

RadioCuba Cuban Radio-communication Company   *Hav, Cuba*

- Worked to modify UHF/VHF exciter modules from PAL to NTSC by changing the board layout with 60 dB improvement for the desired frequencies.
- Designed RF matching networks for maximum power transfer to 50-ohm load or antenna modeling results with Matlab and using E-field sensors and spectrum/network analysers.

Awards

USENIX Student Travel Award FAST'19	2019
Grace Hooper Celebration of Women in Computing Scholarship GHC'19	2019
USENIX Student Travel Award FAST'18	2018

Teaching

Operating Systems   Spring 2019

Florida International University   *Miami, FL*

Undergraduate Course | Teaching Assistant

Operating Systems   Fall 2018

Florida International University   *Miami, FL*

Undergraduate Course | Teaching Assistant

Transmission Systems I and II   2011 – 2012

Technological University, CUJAE   *Hav, Cuba*

Undergraduate Course | Teaching Assistant

Analog Electronics I and II   2010 – 2011

Technological University, CUJAE   *Hav, Cuba*

Undergraduate Course | Teaching Assistant

Societies & Activities

Women in Computer Science, WiCS	2019 - Present
UPsilon Pi Epsilon, UPE	2019 - Present
Google CS First volunteer as a Coding instructor for kids under the age of 8.	2019

Teaching general computer science concepts, and critical thinking problems using Scratch.

Sylab Lead Student Researcher

Technical Skills

Languages: Python, C#, C/C++, shell, Matlab, LabView, LaTex
Familiar: HTML, Java, JavaScript, MySQL
Developer Tools: Git, VS Code, Visual Studio, PyCharm, Eclipse