# Liana Valdes

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# **Research Interests**

Storage Systems, Distributed 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. 2018 – Present
• Designed and developed novel caching algorithms for storage caches to improve performa production workloads.	nce using a wide variety of
• Incorporated new design insights in caching algorithms to reduce the number of writes in	SSD-based caches.
<b>Distributed caching</b>   Systems Research Laboratory Sylab	May. 2020 – Present
• Designed and developed a distributed, scalable and persistent caching layer for cloud dat	a centers.
• Researched replication and recovery protocols to ensure fault-tolerance and availability.	
Publications & Presentations	
Unifying the Data Center Caching Layer - Feasible? Profitable?   HotStorage'21	Jul. 2021
<i>Liana V. Rodriguez</i> , Alexis Gonzalez, Pratik Poudel, Raju Rangaswami and Jason Liu, 19th A Topics in Storage and File Systems	CM Workshop on Hot

Learning Cache Replacement with Cacheus | FAST'21 Feb. 2021 Liana V. Rodriguez, Farzana Yusuf, Steven Lyons, Eysler Paz, Raju Rangaswami, and Jason Liu, Ming Zhao, Giri Narasimhan, 19th USENIX Conference on File and Storage Technologies To Cache or Not to Cache | Submitted and Under-review 2020 Steven Lyons, Liana V. Rodriguez, and Raju Rangaswami Learning Cache Replacement with Cacheus | Poster First Annual FIU SCIS Research Day Oct. 2019

Liana V. Rodriguez, Farzana Y., Steven L., Eysler P., Raju R., Jason L., Ming Z., Giri Narasimhan ANTY O 11 1 .....

ANX: Caching with Anxiety   Poster First Annual FIU SCIS Research Day	Oct. 2019
Steven Lyons, Liana V. Rodriguez, and Raju Rangaswami	

#### 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

### Florida International University 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

# Junior Network Engineer

**Graduate Research Assistant** 

ETECSA Cuban Telecommunication Company

improving data retrieval and the analysis of errors in the system.

- 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**

RadioCuba Cuban Radio-communication Company

- 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

## 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

Sylab Lead Student Researcher	2020
Women in Computer Science, WiCS	2019
UPsilon Pi Epsilon, UPE	2019
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.	

Aug. 2017 – Present Miami, FL

Oct. 2014 – Jun. 2015

Hav, Cuba

Mar. 2012 – Jul. 2014

Hav. Cuba