

# Liana Valdes

PH.D. CANDIDATE

SCHOOL OF COMPUTING AND INFORMATION SCIENCE

FLORIDA INTERNATIONAL UNIVERSITY

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## RESEARCH INTERESTS

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

## EDUCATION

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### Florida International University

*Ph.D in Computer Science*

*Advisor: Raju Rangaswami*

Miami, FL

*Aug. 2017 – Present*

GPA 3.83/4.0

### Technological University, CUJAE

*BS in Telecommunications and Electronics*

*College of Engineering*

Hav, Cuba

*Sep. 2009 – Jun. 2014*

GPA 3.58/4.0

## RESEARCH PROJECTS

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### 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

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### Learning Cache Replacement with CACHEUS | Submitted and Under-review

Liana Valdes, Farzana Yusuf, Steven Lyons, Eysler Paz, Raju Rangaswami, Jason Liu, Ming Zhao, Giri Narasimhan

### To Cache or Not to Cache | Submitted and Under-review

Steven Lyons, Liana Valdes, and Raju Rangaswami

### Learning Cache Replacement with CACHEUS | FIU SCIS Research Day

Oct. 2019

3-min lightning presentation and poster

### ANX: Caching with Anxiety | FIU SCIS Research Day

Oct. 2019

Poster accepted

### 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

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### 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

<b>Operating Systems</b>	Spring 2019
<i>Florida International University</i>	<i>Miami, FL</i>
Undergraduate Course   Teaching Assistant	
<b>Operating Systems</b>	Fall 2018
<i>Florida International University</i>	<i>Miami, FL</i>
Undergraduate Course   Teaching Assistant	
<b>Transmission Systems I and II</b>	2011 – 2012
<i>Technological University, CUJAE</i>	<i>Hav, Cuba</i>
Undergraduate Course   Teaching Assistant	
<b>Analog Electronics I and II</b>	2010 – 2011
<i>Technological University, CUJAE</i>	<i>Hav, Cuba</i>
Undergraduate Course   Teaching Assistant	

## SOCIETIES

Women in Computer Science, WiCS	2019
UPsilon Pi Epsilon, UPE	2019
Google CS First volunteer	2019

## 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  
**Libraries:** pandas, NumPy, Matplotlib