

Liana Valdes Rodriguez

PH.D. CANDIDATE

SCHOOL OF COMPUTING AND INFORMATION SCIENCE

FLORIDA INTERNATIONAL UNIVERSITY

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RESEARCH INTERESTS

Storage, Distributed Systems, Caching Algorithms, ML for Systems, Systems for ML and Operating Systems.

EDUCATION

Florida International University

Aug. 2017 - Jun. 2023

Ph.D. in Computer Science

Miami, FL

Advisor: Eminent Scholar Chaired Prof. Raju Rangaswami

GPA 3.83/4.0

Graduate Relevant Courses: Operating Systems, Analysis of Algorithms, Theory of Computation, Computer Communication and Networking Technologies, Introduction to Algorithms, Secure Application Programming, Principles of DBMS, Machine Learning, Advanced Software Engineering, Data Visualization.

Technological University of Havana “José Antonio Echeverría”

Sep. 2009 - Jun. 2014

B.Sc. in Telecommunication and Electronic Engineering

Havana, Cuba

PUBLICATIONS

Infusing Pub-Sub Storage with Transactions | HotStorage’22

Jul. 2022

Liana V. Rodriguez, John Bent, Tim Shaffer, and Raju Rangaswami, 14th ACM Workshop

Unifying the Data Center Caching Layer - Feasible? Profitable? | HotStorage’21

Jul. 2021

Liana V. Rodriguez, Alexis Gonzalez, Pratik Poudel, Raju Rangaswami and Jason Liu, 13th ACM Workshop

Learning Cache Replacement with Cacheus | FAST’21

Feb. 2021

Liana V. Rodriguez, Farzana Yusuf, Steven Lyons, Eysler Paz, Raju Rangaswami, Jason Liu, Ming Zhao, Giri Narasimhan, 19th USENIX Conference

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

TALKS

CORTX and FDMI | CORTX Meet the Architect Series

Nov. 2022

Liana V. Rodriguez, John B., Sai N., Ganesan U., Nikita D., Paul H. and Rupasree Roy

Infusing Pub-Sub Storage with Transactions | HotStorage’22 Presentation

Jul. 2022

Liana V. Rodriguez, John B., Tim S., and Raju Rangaswami

Unifying the Data Center Caching Layer - Feasible? Profitable? | HotStorage’21 Presentation

Jul. 2021

Liana V. Rodriguez, Alexis G., Pratik P., Raju R. and Jason Liu

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

ANX: Caching with Anxiety | Poster First Annual FIU SCIS Research Day

Oct. 2019

Steven L., Liana V. Rodriguez, and Raju Rangaswami

Driving Cache Replacement with ML-Based LeCaR | HotStorage’18 Poster session

Jul. 2018

Giusseppe V., Liana V. Rodriguez, Wendy A. Martinez, Steven L., Jason L., Raju R., Ming Z., Giri Narasimhan

RESEARCH PROJECTS

- Extensible Distributed Storage Systems | Seagate Inc. & Syllab** **Aug. 2021**
- Design a new approach for extensible distributed storage systems that use plugins to implement of features.
 - Define a taxonomy of plugins that uses transactional coupling and reliable notifications basic mechanisms.
 - Simplify communication between all distributed components and the integrations.
 - Evaluate different plugin prototypes in terms of performance and development complexity.
- Distributed Caching in Data Centers | Syllab** **May. 2020**
- Design and develop a generic, distributed caching service for current storage system interfaces.
 - Incorporate a consistent and durable design for caching distributed writes.
 - Improve cache read/write efficiency relative to back-end storage.
 - Implement a writable and consistent cache with respect to back-end storage.
- Caching Algorithms for Storage Caches | Syllab** **Aug. 2017**
- Characterize common production storage workloads across cloud service providers.
 - Design and develop new caching algorithms to improve hit-rate for a variety of workloads.
 - Reduce the cost penalty in SSD-based caches such as the number of writes incur in the device.
 - Reduce miss latency using the caching algorithm design.

EXPERIENCE

- Graduate Research Assistant | Systems Research Laboratory, Syllab** **Aug. 2017 - Apr. 2023**
Florida International University
- Research Intern | Seagate Inc., California, US** **Aug. 2021 - Dec. 2021**
- Seagate's object storage solution, CORTX testing integration and deployment of the software stack.
 - CORTX Storage Extensible Interface research. (**C, Python, Distributed Consensus & Transactions**)
 - Performance study of Motr Object Storage deployed at the *Jülich Supercomputing Center*. (**C, Go, fio, SelfNet**)
- Research Intern | Microsoft Research, Cambridge, UK** **Jan. 2020 - Mar. 2020**
- I worked in Microsoft's Silica Project as part of the optics for the cloud initiative that develop the storage stack for glass-based storage systems.
 - Develop machine learning techniques in the software pipeline that works to improve data recovery and error analysis in the system. (**Python, PyTorch, Scikit-learn, Isolation Forest, Encoders**)
- Jr. Network Engineer | ETECSA Cuban Telecommunication** **Oct. 2014 - Jun. 2015**
- Monitor the infrastructure of the ATM, DSL and PSTN systems for a high network reliability.
 - Performed network assessment to deploy OTN devices for the EPON/GPON fiber-to-home project.
- Network Engineering Intern | RadioCuba** **Mar. 2012 - Jul. 2014**
- Modify UHF/VHF modules from PAL to NTSC changing the board layout to improve frequency signal.
 - Designed RF matching networks for maximum power transfer to 50-ohm load or antenna. (**Matlab, Signal Processing, Network Analysers**)

HONORS & AWARDS

CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference Scholarship 2022
Grace Hooper Celebration of Women in Computing FIU Scholarship GHC'19 & GHC'22
GAANN Fellowship from U.S. Department of Education 2022
USENIX Student Travel Award FAST'23 & FAST'19 & FAST'18

TEACHING ASSISTANT

- Operating Systems** **Aug. 2018 & Jan. 2019**
Florida International University *Miami, FL*
- Transmission Systems** **2011 - 2012**
Technological University of Havana "José Antonio Echeverría", CUJAE *Havana, Cuba*
- Analog Electronics** **2010 - 2011**
Technological University of Havana "José Antonio Echeverría", CUJAE *Havana, Cuba*