

# Janki Bhimani

Knight Foundation School of Computing and Information Science, Florida International University

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## RESEARCH INTERESTS

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Flash-Based Storage Systems; Emerging Non-Volatile Memories; Performance Modeling and Prediction; Capacity Planning; Resource Management; Cloud Computing; Applied Machine Learning.

## EDUCATION

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**Doctor of Philosophy (Ph.D.), Computer Engineering** Aug 2019

Northeastern University, Boston, MA, USA

Dissertation: Enhancing Efficiency and Endurance of Flash-Based Storage for Big Data Processing on Enterprise Cloud and Datacenter

**Master of Science (M.S.), Computer Engineering** Jan 2016

Northeastern University, Boston, MA, USA

M.S. research: FiM - Fine grained Model to Predict Heterogeneous Computing Platforms Performance

**Bachelor of Technology (B.Tech), Electrical & Electronics Engineering** Aug 2013

GITAM University, Vishakhapatnam, India

Major: Robotics and Programming of Embedded Systems, Minor: Circuit Design, Power Management

## FULL-TIME ACADEMIC EXPERIENCE

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**Assistant Professor** Aug 2019 - Current

School of Computing and Information Science

Florida International University, Miami FL, USA

## PART-TIME ACADEMIC EXPERIENCE

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**Volunteering Affiliated Faculty** Aug 2019 - Current

Center for Women's and Gender Studies (CWGS)

Florida International University, Miami FL, USA

**Instructor** Sep 2017 - Dec 2017

College of Engineering

Northeastern University, Boston MA, USA

**Graduate Research and Teaching and Assistant** May 2014 - Jun 2019

Khoury College of Computer Science and College of Engineering

Northeastern University, Boston MA, USA

**Undergraduate Research Assistant**  
Electrical and Electronics Engineering  
GITAM University, Vishakhapatnam, India

Jul 2009 - Apr 2013

## NON-ACADEMIC EXPERIENCE

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**Software Development Infrastructure Engineer**  
Samsung Semiconductors Inc. Research Lab, San Jose, CA, USA

May 2018 - Aug 2018

**Performance Engineer**  
Samsung Semiconductors Inc. Research Lab, San Jose, CA, USA

May 2017 - Aug 2017

**Engineer - Performance Architect**  
Samsung Semiconductors Inc. Research Lab, San Jose, CA, USA

May 2016 - Aug 2016

**Student Chair**  
GITAM University Student Activity Center (GUSAC), India

May 2011 - May 2013

**IC Design Intern**  
Energy Options, Rajkot, India

Jun 2012 - Jul 2012

**NASA STEM Engagement**  
NASA's John F. Kennedy Space Center, FL, USA

May 2012 - Jun 2012

## PROFESSIONAL ACHIEVEMENTS, HONORS, AWARDS, AND FELLOWSHIPS

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1. 2022 The Best Paper Award Candidate at Design, Automation and Test in Europe Conference. The European Event for Electronic System Design and Test (DATE'22)
2. 2022 Quality Matters Certification for Online Course - COP3530 Data Structures
3. 2021 Awarded Certificate of Completion from ASEE DELTA Junior Faculty Institute
4. 2021 Grace Hopper Celebration of Women in Computing (GHC) Faculty Scholarship
5. 2021 Recognized as Distinguished Reviewer Award, 13th ACM Workshop on Hot Topics in Storage and File Systems (HotStorage '21)
6. 2020 Received Certification for Hybrid Course - COP3530 Data Structures
7. 2020 Grace Hopper Celebration of Women in Computing (GHC) Faculty Scholarship
8. 2019 Outstanding Graduate Research Award, Northeastern University
9. 2018 The Best Paper Award at 11th IEEE International Conference on Cloud Computing (IEEE CLOUD)
10. 2017 The Best Paper Award at 36th IEEE International Performance Computing and Communications Conference (IPCCC)
11. 2014 Double Husky Scholarship, Northeastern University
12. 2012 The Best Budget Robot Award at 3rd Lunabotics International Mining Competition, NASA, Kennedy Space Center, FL

13. 2012 The Best Working Model Award in Junk Yard Wars at Conscientia, Indian Institute of Space Science Technology (IIST)
14. 2012 The Best Paper Award at Aagama National Level Technical Paper Contest
15. 2011 The Best Working Model in Junk Yard Wars during Technozion at National Institute Of Technology (NIT)
16. 2011 The Outstanding Debate Performance Award by Institute of Engineers India (IEI)
17. 2010 The Impromptu Speaker Award by International Society for Technology in Education (ISTE)
18. 2010 - 2013 University Merit Scholarship, GITAM University

## FUNDED RESEARCH GRANTS

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[4 PI + 2 co-PI = \$646,000; My share of PI funds to FIU = \$301,071; My share of co-PI funds to FIU = \$26,410.79 ]

1. **2021 Samsung Semiconductor Inc. Equipment Grant (Only PI)**  
 “Parallel Data Access with Key-Value SSDs”  
 Total Value: \$10,000 (Direct+Indirect)      My share: \$10,000 (100%)  
 Start date: Oct 1, 2021      Expiration date: Jun 30, 2022
2. **2021-2022 NSF REU Supplement (Only PI)**  
 “CNS-2122987 - REU: New Techniques for I/O Behavior Modeling and Persistent Storage Device Configuration”  
 Total Value: \$16,000 (Direct+Indirect)      My share: \$16,000 (100%)  
 Start date: May 1, 2021      Expiration date: Apr 30, 2022
3. **2020-2023 NSF CISE Core (Lead PI)**  
 “CNS-2008324 - Small: New Techniques for I/O Behavior Modeling and Persistent Storage Device Configuration”  
 Co-PI: Ningfang Mi, Northeastern University  
 Total Value: \$500,000 (Direct+Indirect)      My share: \$255,071 (51%)  
 Start date: May 1, 2020      Expiration date: Apr 30, 2023
4. **2020-2022 Cyber Florida (Co-PI)**  
 “RumorHunt: A Next-Generation Online Scalable Streaming System”  
 PI team: Liting Hu, FIU and Zhishan Guo, University of Central Florida  
 Total Value: \$75,000 (Direct+Indirect)      My share: \$21,410.79 (28%)  
 Start date: Aug 1, 2020      Expiration date: May 30, 2022
5. **2019-2020 FIU Faculty Grantsmanship Development Program (Co-PI)**  
 “Design, Development and Testing of Distributed Computing Framework for globally coordinated data submission and accessibility of Mass Spectrometry Data”  
 PI team: Fahad Saeed, Alex Afanasyev, Hadi Amini, FIU  
 Total Value: \$25,000 (Direct+Indirect)      My share: \$5,000 (20%)  
 Start date: Nov 1, 2019      Expiration date: May 30, 2020
6. **2019 Samsung Semiconductor Inc. Equipment Grant (Only PI)**  
 “Exploring Vulnerabilities of Key-Value SSDs”

Total Value: \$20,000 (Direct+Indirect)  
Start date: Oct 1, 2019

My share: \$20,000 (100%)  
Expiration date: Sep 30, 2021

## PUBLICATIONS IN DISCIPLINE

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Citation counts are taken from my Google Scholar Profile, which lists the following statistics:  
Total citations: 735, h-index: 13, i10-index: 16.

### Selective Refereed Journal Publications

1. Janki Bhimani, Zhengyu Yang, Jingpei Yang, Adnan Maruf, Ningfang Mi, Rajinikanth Pandurangan, Changho Choi, Vijay Balakrishnan. Automatic Stream Identification to Improve Flash Endurance in Data Centers. *ACM Transactions on Storage (TOS)* 2021. Tier 1 Journal with impact factor 1.59.
2. Janki Bhimani, Adnan Maruf, Ningfang Mi, Rajinikanth Pandurangan, and Vijay Balakrishnan. Auto-Tuning Parameters for Emerging Multi-Stream Flash-Based Storage Drives Through New I/O Pattern Generations. *IEEE Transactions on Computers (TC)* 2020. Tier 1 Journal with impact factor 3.131.
3. Janki Bhimani, Ningfang Mi, Miriam Leeser, and Zhengyu Yang, New Performance Modeling Methods for Parallel Data Processing Applications, *ACM Transactions on Modeling and Computer Simulation (TOMACS)*, 2019. DOI 10.1145/3309684. Tier 1 Journal with impact factor 1.380.
4. Zhengyu Yang, Manu Awasthi, Mrinmoy Ghosh, Janki Bhimani, and Ningfang Mi, I/O Workload Management for All-Flash Datacenter Storage Systems Based on Total Cost of Ownership, *IEEE Transactions on Big Data (TBDATA)*, Special Issue on the Integration of Extreme Scale Computing and Big Data Management and Analytics, 2018. DOI 10.1109/TBDATA.2018.2871114. Tier 1 Journal with impact factor 2.00.
5. Janki Bhimani, Zhengyu Yang, Ningfang Mi, Jingpei Yang, Qiumin Xu, Manu Awasthi, Rajinikanth Pandurangan, and Vijay Balakrishnan, Docker Container Scheduler for I/O Intensive Applications running on NVMe SSDs, *IEEE Transactions on Multi-Scale Computing Systems (TMSCS)*, 2018. DOI: 10.1109/TMSCS.2018.2801281. Tier 1 Journal with impact factor 2.065.
6. Zhengyu Yang, Janki Bhimani, Yi Yao, Cho-Hsien Lin, Jiayin Wang, Ningfang Mi, and Bo Sheng, AutoAdmin: Admission Control in YARN Clusters Based on Dynamic Resource Reservation, *Scalable Computing: Practice and Experience, Special Issue on Advances in Emerging Wireless Communications and Networking (SCPE)*, 2018. Volume 19, Number 1, pp. 53–67.
7. Zhengyu Yang, Yufeng Wang, Janki Bhimani, Chiu C. Tan, and Ningfang Mi, EAD: Elasticity Aware Deduplication Manager for Datacenters with Multi-tier Storage Systems, *Cluster Computing (CC)*, 2018. <https://doi.org/10.1007/s10586-018-2141-z>.
8. Zhengyu Yang, Janki Bhimani, Jiayin Wang, David Evans, and Ningfang Mi, Automatic and Scalable Data Replication Manager in Distributed Computation and Storage Infrastructure of Cyber-Physical Systems, *Scalable Computing: Practice and Experience, Special Issue on Communication, Computing, and Networking in Cyber-Physical Systems (SCPE)*, 2018. Volume 18, Number 4, pp. 291–311.

## Highly Selective Peer Reviewed Conference Publications

### Acceptance rates below 30%

9. Adnan Maruf, Sashri Brahmakshatriya, Baolin Li, Devesh Tiwari, Gang Quan and Janki Bhimani, Do Temperature and Humidity Exposures Hurt or Benefit Your SSDs?, 2022 Design, Automation and Test in Europe Conference. The European Event for Electronic System Design and Test (DATE'22), Virtual. Acceptance Rate: 25%. (*Best Paper Award Candidate*)
10. Adnan Maruf, Ashikee Ghosh, Janki Bhimani, Daniel Campello, Andy Rudoff, Raju Rangaswami, MULTI-CLOCK: Dynamic Tiering for Hybrid Memory Systems, 2022 IEEE International Symposium on High-Performance Computer Architecture (HPCA'22), Seoul, South Korea, 2022. Acceptance Rate: 30%.
11. Adnan Maruf, Zhengyu Yang, Bridget Davis, Daniel Kim, Jeffrey Wong, Matthew Durand, and Janki Bhimani, Understanding Flash-Based Storage I/O Behavior of Games, 2021 IEEE International Conference on Cloud Computing (CLOUD'21), Online Virtual Congress, 2021. Acceptance Rate: 23.8%.
12. Janki Bhimani, Jingpei Yang, Ningfang Mi, Changho Choi, and Manoj Pravakar Saha, Fine-grained Control of Concurrency within KV-SSDs, 2021 14th ACM International Systems and Storage Conference (SYSTOR'21), Virtual. Acceptance Rate: 29.9%.
13. Manoj Pravakar Saha, Bryan Kim, and Janki Bhimani, KV-SSD: What is it Good For?, 2021 Design Automation Conference (DAC'21), San Francisco, CA, 2021. Acceptance Rate: 23%.
14. Danlin Jia, Manoj Pravakar Saha, Janki Bhimani, and Ningfang Mi, Performance and Consistency Analysis for Distributed Deep Learning Applications, 2020 International Performance Computing and Communications Conference (IPCCC'20), Virtual using Zoom, 2020. Acceptance Rate: 29.3%.
15. Janki Bhimani, Rajinikanth Pandurangan, Ningfang Mi, and Vijay Balakrishnan, Emulate Processing of Assorted Database Server Applications on Flash-Based Storage in Datacenter Infrastructures, 2019 International Performance Computing and Communications Conference (IPCCC'19), London, UK, 2019. Acceptance Rate: 29.2%.
16. Danlin Jia, Janki Bhimani, Son Nam Nguyen, Bo Sheng, and Ningfang Mi, ATuMm: Auto-tuning Memory Manager in Apache Spark, 2019 International Performance Computing and Communications Conference (IPCCC'19), London, UK, 2019. Acceptance Rate: 29.2%.
17. Janki Bhimani, Tirthak Patel, Ningfang Mi, and Devesh Tiwari, "What does Vibration do to Your SSD?", 2019 Design Automation Conference (DAC'19), Las Vegas, NV, 2019. Acceptance Rate: 24.3%.
18. Janki Bhimani, Ningfang Mi, Zhengyu Yang, Jingpei Yang, Rajinikanth Pandurangan, Changho Choi and Vijay Balakrishnan, "FIOS: Feature Based I/O Stream Identification for Improving Endurance of Multi-Stream SSDs", 2018 IEEE International Conference on Cloud Computing (CLOUD'18), San Francisco, CA, 2018. Acceptance Rate: 15%. (*Best Paper Award*)
19. Janki Bhimani, Ningfang Mi, and Bo Sheng, "BloomStream: Data Temperature Identification for Flash Based Memory Storage Using Bloom Filters", 2018 IEEE International

- Conference on Cloud Computing (CLOUD'18), San Francisco, CA, 2018. Acceptance Rate: 15%.
20. Zhengyu Yang, Morteza Hoseinzadeh, Ping Wong, John Artoux, Clay Mayers, David Thomas Evans, Rory Thomas Bolt, Janki Bhimani, Ningfang Mi, and Steven Swanson, "H-NVMe: A Hybrid Framework of NVMe-based Storage System in Cloud Computing Environment", IEEE International Performance Computing and Communications Conference (IPCCC'17), San Diego, CA, 2017. (*Best Paper Award*)
  21. Zhengyu Yang, Morteza Hoseinzadeh, Allen Andrews, Clay Mayers, David Thomas Evans, Rory Thomas Bolt, Janki Bhimani, Ningfang Mi, and Steven Swanson, "AutoTiering: Automatic Data Placement Manager in Multi-Tier All-Flash Datacenter", IEEE International Performance Computing and Communications Conference (IPCCC'17), San Diego, CA, 2017.
  22. Janki Bhimani, Ningfang Mi, Miriam Leeser, and Zhengyu Yang, "FiM: Performance Prediction Model for Parallel Computation in Iterative Data Processing Applications", IEEE International Conference on Cloud Computing (CLOUD'17), Honolulu, HI, 2017. Acceptance Rate: 18%.
  23. Han Gao, Zhengyu Yang, Janki Bhimani, Teng Wang, Jiayin Wang, Ningfang Mi, and Bo Sheng, "AutoPath: Harnessing Parallel Execution Paths for Efficient Resource Allocation in Multi-Stage Big Data Frameworks", International Conference on Computer Communications and Networks (ICCCN'17), Vancouver, Canada, 2017. Acceptance Rate: 25%.
  24. Qiumin Xu, Manu Awasthi, Krishna T. Malladi, Janki Bhimani, Jingpei Yang, and Murali Annavaram. "Performance analysis of containerized applications on local and remote storage" International Conference on Massive Storage Systems and Technology (MSST'17), Santa Clara, CA, 2017.
  25. Janki Bhimani, Jingpei Yang, Zhengyu Yang, Ningfang Mi, Qiumin Xu, Manu Awasthi, Rajinikanth Pandurangan, and Vijay Balakrishnan, "Understanding Performance of I/O Intensive Containerized Applications for NVMe SSDs", IEEE International Performance Computing and Communications Conference (IPCCC'16), Las Vegas, NV, 2016. Acceptance Rate: 25.50%.
  26. Zhengyu Yang, Jianzhe Tai, Janki Bhimani, Jiayin Wang, Ningfang Mi, and Bo Sheng, "GREM: Dynamic SSD Resource Allocation in Virtualized Storage Systems with Heterogeneous VMs", IEEE International Performance Computing and Communications Conference (IPCCC'16), Las Vegas, NV, 2016. Acceptance Rate: 25.50%.

**Other Peer Reviewed Conference and Workshop Publications**  
**Acceptance rates provided when known**

27. Mahsa Bayati, Janki Bhimani, Ronald Lee, Ningfang Mi. "Exploring Benefits of NVMe SSDs for BigData Processing in Enterprise Data Centers" International Conference on Big Data Computing and Communication (BIGCOM'19), Qingdao, China, 2019.
28. Janki Bhimani, Jingpei Yang, Zhengyu Yang, Ningfang Mi, NHV Krishna Giri, Rajinikanth Pandurangan, Changho Choi, and Vijay Balakrishnan. "Enhancing SSDs with multi-stream: What? why? how?" IEEE International Performance Computing and Communications Conference (IPCCC'17), San Diego, CA, 2017. (Short Paper)

29. Janki Bhimani, Zhengyu Yang, Miriam Leeser, and Ningfang Mi, “Accelerating Big Data Applications Using Lightweight Virtualization Framework on Enterprise Cloud”, IEEE High Performance Extreme Computing Conference (HPEC’17), Waltham, MA, 2017.
30. Qiumin Xu, Manu Awasthi, Krishna T. Malladi, Janki Bhimani, Jingpei Yang, Murali Annavaram, “Docker Characterization on High Performance SSDs”, IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS’17), Santa Rosa, CA, 2017. (Short Paper)
31. Liu Chao, Janki Bhimani, and Miriam Leeser, “Using High Level GPU Tasks to Explore Memory and Communications Options on Heterogeneous Platforms” ACM Workshop on Software Engineering Methods for Parallel and High Performance Applications (SEM4HPC), Washington, D.C., 2017.
32. Liu Chao, Janki Bhimani, and Miriam Leeser, “Exploring Memory Options for Data Transfer on Heterogeneous Platforms”, The International ACM Symposium on High-Performance Parallel and Distributed Computing (HPDC’17), Washington, D.C., 2017. (Short Paper)
33. Janki Bhimani, Miriam Leeser, and Ningfang Mi, “Performance Prediction Techniques for Scalable Large Data Processing in Distributed MPI Systems”, IEEE International Performance Computing and Communications Conference (IPCCC’16), Las Vegas, NV, 2016. Acceptance Rate: 12%. (Short Paper)
34. Janki Bhimani, Miriam Leeser, and Ningfang Mi, “Design Space Exploration of GPU Accelerated Cluster Systems for Optimal Data Transfer Using PCIe Bus”, IEEE High Performance Extreme Computing Conference (HPEC’16), Waltham, MA, 2016.
35. Janki Bhimani, Miriam Leeser, and Ningfang Mi, “Accelerating K-Means Clustering with Parallel Implementations and GPU Computing”, IEEE High Performance Extreme Computing Conference (HPEC’15), Waltham, MA, 2015.
36. Baiyu Chen, Zhengyu Yang, Siyu Huang, Xianzhi Du, Zhiwei Cui, Janki Bhimani, Xin Xie, and Ningfang Mi, “Cyber-Physical System Enabled Nearby Traffic Flow Modelling for Autonomous Vehicles”, IEEE International Performance Computing and Communications Conference, Special Session on Cyber Physical Systems: Security, Computing, and Performance (IPCCC CPS’17), San Diego, CA, 2017.
37. Xianfei Xia, Hongru Xiao, Zhengyu Yang, Xin Xie, and Janki Bhimani, Pelletization Characteristics of the Hydrothermal Pretreated Rice Straw with Added Binders. *Arabian Journal for Science and Engineering* 43, no. 9 (2018): 4811-4820.

## PRESENTED PAPERS, AND LECTURES

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1. Guest Speaker: Research Towards Data Storage and Management, Presentation Request for Flit-Path Scholars, Miami, FL, Feb 11, 2022.
2. Invited Speaker: Emerging Technologies Moving Forward, Entrepreneurs’ Organization (EO), Miami, FL, Feb 10, 2022.
3. Guest Lecture: Towards Designing Intelligent Storage Devices, IBM Research, Almaden, San Jose, CA, May 12, 2021.

4. Guest Lecture: Challenges of the Evolving Memory and Storage Technologies, Memory Solutions Lab, Samsung, San Jose, CA, October 23, 2020.
5. Guest Speaker: Ph.D. in Computer Science – from the lens of a Girl who likes pink, FIU Women in Cybersecurity (WiCys) Student Chapter, Miami, FL, Oct 22, 2020.
6. Guest Lecture: New Techniques for Data Management in Evolving Storage Technologies, Florida International University, Miami, FL, November 22, 2019.
7. Guest Lecture: New Storage Technologies for Big Data Processing on Cloud and Datacenter Infrastructures, Colorado State University, Fort Collins, CO, March 27, 2019.
8. Paper Presentation Talk: FIOS: Feature Based I/O Stream Identification for Improving Endurance of Multi-Stream SSDs, 2018 IEEE International Conference on Cloud Computing (CLOUD’18), San Francisco, CA, 2018.
9. Paper Presentation Talk: BloomStream: Data Temperature Identification for Flash Based Memory Storage Using Bloom Filters, 2018 IEEE International Conference on Cloud Computing (CLOUD’18), San Francisco, CA, 2018.
10. Paper Presentation Talk: FiM: Performance Prediction Model for Parallel Computation in Iterative Data Processing Applications, IEEE International Conference on Cloud Computing (CLOUD’17), Honolulu, HI, 2017.
11. Paper Presentation Talk: Understanding Performance of I/O Intensive Containerized Applications for NVMe SSDs, IEEE International Performance Computing and Communications Conference (IPCCC’16), Las Vegas, NV, 2016.
12. Paper Presentation Talk: Accelerating Big Data Applications Using Lightweight Virtualization Framework on Enterprise Cloud, IEEE High Performance Extreme Computing Conference (HPEC’17), Waltham, MA, 2017.
13. Paper Presentation Talk: Design Space Exploration of GPU Accelerated Cluster Systems for Optimal Data Transfer Using PCIe Bus, IEEE High Performance Extreme Computing Conference (HPEC’16), Waltham, MA, 2016.
14. Paper Presentation Talk: Accelerating K-Means Clustering with Parallel Implementations and GPU Computing, IEEE High Performance Extreme Computing Conference (HPEC’15), Waltham, MA, 2015.

## **CREATIVE WORK**

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1. Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis strategic planning technique used to improve the collective learning experience of the class.

## **PATENT DISCLOSURES, APPLICATIONS, AND AWARDS**

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1. Manoj Pravakar Saha, Janki Bhimani, inventors; “Flexible and Efficient Data Management Techniques Within Key Value Storage ”, US 17/340,573.
2. Adnan Maruf, Ashikee Ghosh, Raju Rangaswam, and Janki Bhimani, inventors; “ML based Tiered Memory”, US 17/344,449.



3. Janki Bhimani, Jingpei Yang, Changho Choi, inventors; Samsung Electronics Co Ltd, assignee. “Parallel key value based multi-thread machine learning exploiting KV-SSDs” US 16/528,492.
4. Janki Bhimani, Rajinikanth Pandurangan, Changho Choi, Vijay Balakrishnan, inventors; Samsung Electronics Co Ltd, assignee. “System and method for identifying hot data and stream in a solid-state drive” US 15/895797.
5. Janki Bhimani, Rajinikanth Pandurangan, Vijay Balakrishnan, Changho Choi, inventors; Samsung Electronics Co Ltd, assignee. “Methods and systems for testing storage devices via a representative I/O generator” United States patent application US 15/853419.
6. Janki Bhimani, Anand Subramanian, Vijay Balakrishnan, and Jingpei Yang, inventors; Samsung Electronics Co Ltd, assignee. “Container workload scheduler and methods of scheduling container workloads” United States patent application US15/820856.
7. Janki Bhimani, Jingpei Yang, Changho Choi, Jianjian Huo, inventors; Samsung Electronics Co Ltd, assignee. “Smart I/O stream detection based on multiple attributes” United States patent application US 15/344,422.
8. Janki Bhimani, Hingkwon Huen, Jingpei Yang, Manu Awasthi, Vijay Balakrishnan, Jason Martineau, inventors; Samsung Electronics Co Ltd, assignee. “Intelligent controller for containerized applications” United States patent application US 15/379,327.

## **ACADEMIC SUPERVISION**

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### **Doctoral and MS Students Advising**

1. Adnan Maruf, Ph.D. student.  
Dissertation topic: Improving the performance and reliability of systems with emerging memory and storage devices.  
Proposal: Spring 2022.
2. Manoj Pravakar Saha, Ph.D. student.  
Dissertation topic: Enhancing the in-storage indexing.  
Proposal plan: Fall 2022.
3. Ashikee Ghosh, co-advised Ph.D. student.
4. Dwaraka Prasath Mohen Babu, M.S. student.

### **Ph.D. Committee Member**

1. Liana Valdes Rodriguez
2. Oswaldo Artiles
3. Muhammad Haseeb
4. Danlin Jia (Northeastern University)
5. Pedro Espina
6. Sumesh Kumar

7. Ziyang Jiao (Syracuse University)
8. Omkar Desai (Syracuse University)

### **Independent Study**

1. Dwaraka Prasath Mohen Babu, Spring 2022, Topic: Data Structures to Identify Data Streams.
2. Sashri Brahmakshatriya, Summer 2021, Topic: Analyze Reliability of SSDs.
3. Christopher Meadows, Summer 2021, Topic: Design Data Stream Identifier.

### **Current REU's**

1. Daniel Carlson
2. Roberto Martinez

### **Graduated REU's**

1. Christopher Meadows
2. Aris Duani Rojas
3. Sashri Brahmakshatriya
4. Natalia Valencia
5. Kevin Nordman

### **Capstone Mentoring**

1. Patrick Perez
2. Oscar Barbosa
3. Nazmul Huq
4. Luis Acosta
5. Ettore Mottola
6. Eitan Flor
7. Bryan Camacho

## **TEACHING ACTIVITIES**

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### **Graduate Courses Taught**

Overall SPOTS rating: 4.48/5

1. CIS 5346: Storage Systems, Spring 2022, Fully-online modality, SPOTS- Number of student: 30, Response rate: TBD, Overall average: TBD.
2. CIS 5900: Independent Study, Spring 2022, Hybrid modality, SPOTS- Number of student: 1, Response rate: TBD, Overall average: TBD.
3. CIS 5346: Storage Systems, Fall 2019, In-person modality, SPOTS- Number of student: 12, Response rate: 75%, Overall average: 4.48/5.

## **Undergraduate Courses Taught**

Overall SPOTS rating: 4.06/5

1. COP 3530: Data Structures, Fully-online modality, Spring 2022, SPOTS- Number of student: 52, Response rate: TBD, Overall average: TBD.
2. COP 3530: Data Structures, Fall 2021, Fully-online modality, SPOTS- Number of student: 47, Response rate: 80.9%, Overall average: 4.2/5.
3. CIS 3900 Independent Study, Summer 2021, Hybrid modality, SPOTS- Number of student: 2, Response rate: NA, Overall average: NA.
4. COP 3530: Data Structures, Spring 2021, Fully-online modality, SPOTS- Number of student: 51, Response rate: 72.5%, Overall average: 4.43/5.
5. COP 3530: Data Structures, Fall 2020, Certified hybrid modality, SPOTS- Number of student: 39, Response rate: 84.6%, Overall average: 2.74/5.
6. COP 3530: Data Structures, Spring 2020, Hybrid modality, SPOTS- Number of student: 18, Response rate: 94.4%, Overall average: 4.13/5.
7. EECE 2560: Fundamentals of Engineering Algorithms (Northeastern University), Fall 2017, In-person modality, SPOTS- Number of student: 12, Response rate: 80%, Overall average: 4.8/5.

## **OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE**

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### **FIU Internal Service**

1. Graduate Council (2019-present)
2. KFSCIS Graduate Committee (2019-2021).
3. KFSCIS Tenure Track Faculty Hiring Committee (2020-present).
4. Subject area coordinator: BS-CS for Programming: COP-2210, COP-3337, COP-3530, COP-4338, COP-4226, COP-4520 (2020-present).
5. Supervising capstone or senior projects (2020-present)
6. KFSCIS Diversity Advocate for Faculty Hiring (2020-present).
7. KFSCIS Faculty representative at United Nations Women and Girls in Science day annual celebrations (2022).

### **FIU Microcredential**

Remote Teach Ready Badge Summer 2020

### **Professional Services**

1. Session chair for ACM Workshop on Hot Topics in Storage and File Systems (HotStorage) 2021, leading a session on Flash Storage.
2. Session chair for USENIX Conference on File and Storage Technologies (USENIX FAST) 2021, leading a session on The SSD Revolution Is Not Over.

3. Session chair for IEEE International Symposium on Workload Characterization (IISWC) 2020, leading a session on System Architecture and Applications.
4. TPC for IEEE International Conference on CLOUD Computing, 2022
5. TPC for IEEE International Conference on Distributed Computing Systems (ICDCS), Machine Learning on or for Distributed Systems, 2022
6. TPC for IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid), Performance Modeling, Scheduling and Analysis Track, 2022
7. TPC for Hot Topics in Storage and File Systems (HotStorage), Session Chair for "Flash Storage", 2021, 2022
8. NSF Panelist for Cyberinfrastructure for Sustained Scientific Innovation (CSSI) program
9. TPC for USENIX Conference on File and Storage Technologies (USENIX FAST) and Session Chair for "The SSD Revolution Is Not Over, 2021
10. TPC for IEEE International Parallel & Distributed Processing Symposium (IPDPS), 2020
11. TPC for IEEE International Conference on Workload Characterization (IISWC), 2020
12. TPC for IEEE International Performance Computing and Communications Conference (IPCCC), 2019, 2020

### **Service as Peer Reviewing**

#### **Conferences:**

1. IEEE International Parallel & Distributed Processing Symposium (IPDPS)
2. IEEE International Conference on Cloud Computing (IEEE CLOUD)
3. IEEE High Performance Extreme Computing Conference (IEEE HPEC)
4. IEEE International Conference on Green Computing and Communications (GreenCom)
5. International Conference on Massive Storage Systems and Technology (MSST)
6. IEEE International Conference on Big Data (BigData)
7. International Conference on Networking, Architecture, and Storage (NAS)
8. International Conference on Parallel and Distributed Systems (ICPADS)
9. Workshop on Interactions of NVM/Flash with Operating Systems and Workloads (IN-FLOW)
10. International Conference on Performance Engineering (ICPE)
11. ACM/SIGDA International Symposium on Field-Programmable Gate Arrays (FPGA)
12. IEEE/IFIP International Conference on Dependable Systems and Networks (DNS)
13. Big Data and Cloud Performance Workshop at INFOCOM (DCPerf)
14. International Conference on Autonomic Computing (ICAC)
15. International Conference on Computer Aided Design (ICCAD)

16. International Conference on Cloud Computing Technologies and Applications (CloudTech)
17. Field-Programmable Custom Computing Machines (FCCM)
18. International Conference on Computer. Communication and Networks (ICCCN)
19. IEEE International Performance Computing and Communications Conference (IPCCC)
20. IEEE/ACM International Conference on Utility and Cloud Computing (UCC)

**Journals:**

1. Simulation Modelling Practice and Theory (SIMPAT), Elsevier Journal
2. Computers, MDPI Journal
3. Future Generation Computer Systems (FGCS), Elsevier Journal
4. Transactions on Computers (TC), IEEE Journal
5. ACM Transactions on Modeling and Performance Evaluation of Computing Systems (TOM-PECS), ACM Journal

**Society Memberships**

1. Member (2014-present) Association for Computing Machinery (ACM)
2. Member (2014-present) Institute of the Electrical and Electronics Engineers (IEEE)
3. Member (2014-present) The Advanced Computing Systems Association (USENIX)

**Community Services**

1. Volunteering Affiliated Faculty, Center for Women and Gender Studies (CWGS), Florida International University, Miami FL, USA