



Dr. T. Ragunathan

Education

PhD (Full time) (Computer Science & Engineering),
IIIT-Hyderabad

Major Research Areas

- Distributed File System
- Cloud Computing
- Health Informatics

Work Experience

Teaching and Research

29 years of Teaching experience (including 19 years of Research experience)
6 years of Research experience (as Research Scientist at **IIIT, Hyderabad** (2004-2010))

Minerva online teaching Training

Participated in one week training programme on online teaching using the Minerva Platform during May 2019.

International Visits:

Participated in Education fair at Colombo, Srilanka during June 2018

Participated in one week training programme at MIT, Boston, USA during December 2018, for the course Computer Systems.

Ph.D. Guidance

3 students graduated
2 students submitted thesis
1 student will submit the thesis within September 2023

Research Consultancy

- Served as Consultant for “eAgromet” Project carried out in ICTs for Agriculture And Rural Development Center (e-Sagu Lab), IIIT-Hyderabad.
- Consultant for developing business model for eSagu Project of IIIT-Hyderabad

Sponsored Faculty Development programs

Department of Science and Technology (DST) sanctioned Rs 6 lakhs during January 2016 for organizing 10 Days training programme on Big Data Analytics. The programme was organized during 8-6-16 to 18-6-16 at ACE Engineering College, Hyderabad.

Training Programs in cloud

Acted as the faculty and convener for the following training programs in cloud.

- a. Cloud Infrastructure and Services in association with ICTACT, Tamilnadu and EMC²
- b. Application development using HDFS and Mapreduce

Guest Lectures

Delivered guest lecture on “Hadoop and MapReduce” in DST sponsored FDP on Data Science at Acharya Nagarjuna Univeristy, during January 2017.

Delivered guest lecture on Hadoop in DST sponsored FDP on Big Data Analytics conducted ACE Engg. College during June 2016.

Delivered guest lecture on “Big Data Analytics using Hadoop” in DST sponsored FDP on Big Data Analytics, at Hindustan University, Chennai.

Delivered guest lecture on “ Big data and Hadoop Framework” at SRM University, Chennai during 8-8-17 to 9-8-17.

Publications

- **34 papers** are indexed by Scopus
- **21 papers** are indexed by DBLP
- **More than 35 papers** are indexed by Google Scholar

Journals

- K. Ramdass, T. Raguathan, S. Sumalatha, T. Jayalakshmi and Mohd Wazih Ahmad, Heart Disease Prediction using Novel Quine McCluskey Binary Classifier (QMBC), IEEE Access, 2023, 11, pp. 64324 - 64347
- Nalajala, A., Raguathan, T., Naha, R., Battula, S.K., HRF: Highly Relevant Frequent Patterns-Based Prefetching and Caching Algorithms for Distributed File Systems, Electronics (Switzerland), 2023, 12(5), 1183
- Sharfuddin, M., Raguathan, T., Improving performance of cloud storage systems using a support-based replication algorithm, ECTI Transactions on Computer and Information Technology, 2023, 17(1), pp. 14–26
- Mohammed Sharfuddin, Thirumalaisamy Raguathan, Frequent Block Access Pattern-Based Replication Algorithm for Improving the Performance of Cloud Storage Systems, Journal of Advances in Information Technology, Vol 13 (6), pages 549 – 561, 2022.
- Ms.Anusha Nalajala. T. Raguathan, Efficient Prefetching and Client-side Caching Algorithms for Improving the Performance of Read Operations in Distributed File Systems", IEEE Access, 2022, 10, pp. 126232–126252
- GWOCSA Based Algorithm for Allocating Resources to the Tasks in the Cloud Madhukar, E., Raguathan, T., Revue d'Intelligence Artificiellethis 2022, 36(2), pp. 327–332
- Laskhmi Siva Rama Krishna Talluri, Raguathan Thirumalaisamy, Ramgopal Kota, Ram Prasad Reddy Sadi, Ujjwal KC, Ranesh Kumar Naha, Aniket Mahanti, Providing Consistent State to Distributed Storage System, Volume 10, Issue 2, 2021.
- Improved GRASP Technique based Resource Allocation in the Cloud Madhukar, E., Raguathan, T., International Journal of Advanced Computer Science and applications, 2(11), pages 492–498, 2021
- G. Rathnamma. T. Raguathan and Shobabindu, Improving Performance of a Distributed File System using Hierarchical Collaborative Global Caching Algorithm with Rank_Based Replacement Technique, International Journal of Communication Networks and Distributed Systems, Inderscience publications, 26 (3), pages 287 – 318, 2021.
- Kethavath Prem Kumar, Thirumalaisamy Raguathan, Devara Vasumathi, Pamulapati Krishna Prasad, An Efficient Load Balancing Technique based on Cuckoo Search and Firefly Algorithm in Cloud, International Journal of Intelligent Engineering and Systems, Intelligent Networks and Systems Society publications, 13(3), pages 422–432, 2020.
- T. L. Sivarama Krishna and T. Raguathan, Performance Evaluation of Speculative Semantics- Based Algorithm to Improve the Performance of Distributed File Systems, International Journal of Communication Networks and Distributed Systems , Inderscience publications, 2019, Vol. 22., no. 33, pages 275-293.
- T. Raguathan and P. Krishna Reddy, Speculation-Based Protocols for Improving the performance of Read-only Transactions, International Journal of Computational Science and Engineering, 2011, Vol 5, pages 226-242.
- T. L. Sivarama Krishna, T. Raguathan and B. Sudheer Kumar, Improving the Performance of a Distributed File System through Speculative

Semantics-Based Algorithm, Tsinghua Science and Technology Journal, Volume 20, issue 6, pages 583-593, 2015.

- • E. Madukar and T. Ragunathan, "Efficient scheduling algorithm for cloud", Elsevier Procedia Computer Science Journal, Volume 50, pages: 353 – 356, 2015.
- • T. Ragunathan, B. Sudheer Kumar, G. Rathnamma and others, "Novel Read Algorithms for Improving the Performance of Big Data Storage Systems" , Elsevier Procedia Computer Science Journal, Volume 50, pages 264- 269, 2015.
- • T. Ragunathan, B. Sudheer Kumar, J. Vedika , V. Anitha and others, "Intelligent Transport and Tourism System" , Elsevier Procedia Computer Science Journal, Volume 50, pages 191 – 196, 2015.
- • T. Ragunathan, B. Sudheer Kumar, J. Vedika and others, "Advertisement Posting based on Consumer Behavior" , Elsevier Procedia Computer Science Journal, Volume 50, pages 329 – 334, 2015.

Conferences

- Anusha Nalajala, T. Ragunathan, Rank-Based Prefetching and Multi-level Caching Algorithms to Improve the Efficiency of Read Operations in Distributed File Systems, Accepted in Big Data Analytics (BDA 2021) International conference to be held in IIIT Allahabad, December 15-18, 2021.
- Anusha Nalajala, T. Ragunathan, Sri Harsha Tavidisetty Rajendra, Nagamlla Venkata Sai Nikhith and Rathnamma Gopisetty , Improving the Performance of Distributed File System through Frequent Block Access-based Prefetching Algorithm, ICCCNT 2019, 10th International Conference on Computing, Communication and Networking Technologies, July 6-8, 2019, IIT Kanpur, India
- Mohammed Sharfuddin and T. Ragunathan, Replication Algorithm Based on Confidence Measure in Cloud Storage Systems, Second International Conference on Internet of Things, Data and Cloud Computing, ICC 2017, March 2017, held at University of Cambridge, UK.
- E. Madhukar and T. Ragunathan, Dynamic and static characteristics-based algorithm to allocate VMs to Tasks in Cloud, 15th International Conference on Information Technology, IIIT Bhubaneswar, December 2016, published in IEEE explore, pages 81-86.
- Sneha Tammishetty, T. Ragunathan and others, "IOT-based Traffic Signal Control Technique for Helping Emergency Vehicles", International Conference on Computational Intelligence and Informatics (ICCI) 2016, May 28th to 30th, organized by Jawaharlal Nehru Technological University, Hyderabad (JNTUH), published in Advances in Intelligent Systems and Computing book series (AISC, volume 507), pages 433-440.
- T. Ragunathan, B. Sudheer Kumar and others, "Effective Visiting Schedule Generation in a Tourist Recommender System using Hadoop", International Conference on

Computational Intelligence and Informatics (ICCI) 2016, May 28th to 30th, organized by Jawaharlal Nehru Technological University, Hyderabad (JNTUH) , published in Advances in Intelligent Systems and Computing book series (AISC, volume 507), pages 615-624.

- G. Rathnamma , T. Ragunathan and others " Support-Based Prefetching Technique for Hierarchical Collaborative Caching Algorithm to Improve the Performance of a Distributed File System" , Proceedings of Sixth International Symposium on Parallel Architecture, Programming and Algorithms (PAAP) 2015, China, published in IEEE Explore, pages 97-103.
- T. Ragunathan and Mohammed Sharfuddin, "Frequent Block Access Pattern-Based Replication Algorithm for Cloud Storage Systems" , IC3 (Eighth International Conference on Contemporary Computing) jointly organized by Jaypee Institute of Information Technology (JIIT) and University of Florida and to be held at JIIT, Noida during August 20- 22, 2015.
- B. Rangaswamy and T. Ragunathan, Performance Improvement of Read Operations in Distributed File System through Anticipated Parallel Processing, Proceedings of IC3T International Conference, Hyderabad, July 24-26, 2015 published in Springer Advances in Intelligent Systems and computing Volume 379, pages: 275 – 287.
- T. L. Sivarama Krishna and T. Ragunathan, Customized Web User Interface for Hadoop Distributed File System, Proceedings of IC3T International Conference, Hyderabad, July 24-26, 2015 published in Springer Advances in Intelligent Systems and computing Volume 380, pages: 567 – 576.
- T. L. Sivarama Krishna , T. Ragunathan and Mr. Sudheer Kumar , " Efficient Algorithms for Improving the Performance of Read Operations in Distributed File System" Proceedings of 23rd High Performance Computing Symposium (HPC 2015), held during April 12 - 15, at Alexandria, USA published in Simulation series, Volume 47 Issue 4, pages 143 – 149.
- Improving the performance of read operations in distributed file system, Krishna, T.L.S.R., Ragunathan, T., Battula, S.K., 2014 Proceedings 2014, 6th International Conference on Computational Intelligence and Communication Networks, CICN 2014, published in IEEE xplore 1126-1130.
- A novel technique for improving the performance of read operations in BlobSeer Distributed File System, Krishna, T.L.S.R., Ragunathan, T., Battula, S.K., 2014, Proceedings of the 2014 Conference on IT in Business, Industry and Government: An International Conference by CSI International Conference on Big Data, CSIBIG 2014 , held at Indore during 08-09, March 2014 and published in IEEE explore pages 1-7.
- Mohammed Abdul Azeem, Mohamed Sharfuddin and T. Ragunathan, Support-Based Replication Algorithm for Cloud Storage Systems, Proceedings of ACM COMPUTE 2014, published in ACM digital library article no. 11.
- T. Lakshmi Siva Rama Krishna, T. Ragunathan and Sudheer Kumar Battula, "Performance Evaluation of Read and Write Operations in Hadoop Distributed File System", Proceedings of Sixth International Symposium on

Parallel Architecture, Programming and Algorithms (PAAP) 2014, China published in IEEE Xplore, pages: 110-113.

- Mohak Sharma, P. Krishna Reddy, R. Uday Kiran and T. Ragunathan, Improving The Performance of Recommender System by Exploiting the Categories of Products, Lecture Notes in Computer Science, 2011, Volume 7108/2011, 137-146.
- T. Ragunathan and P. Krishna Reddy, Performance Evaluation of Speculation-Based Protocol for Read-only Transactions, Proceedings of ACM COMPUTE 2010 conference, January 22 & 23, Bangalore, India published in ACM Digital library, article 13.
- Mohit Goyal, T. Ragunathan and P. Krishna Reddy, Extending Speculation-Based Protocols for Read-only Transactions to Distributed Database Systems, HPCC 2010, conference proceedings published in IEEE xplore pages: 527-532
- T. Ragunathan, P. Krishna Reddy and Mohit Goyal, Semantics-Based Asynchronous Speculative Locking Protocol for Improving the Performance of Read-only Transactions, Proceedings of SpringSim 2010 conference, April 12-15, Orlando, Florida published in ACM digital library : article no. 238.
- T. Ragunathan, P. Krishna Reddy, Exploiting Semantics and Speculation for Improving the Performance of Read-only Transactions, Proceedings of COMAD 2008 International conference, December 17-19 held at IIT Bombay.
- T. Ragunathan and P. Krishna Reddy, Improving the performance of read-only transactions through asynchronous speculation. SpringSim 2008: pages 467-474
- T. Ragunathan, Krishna Reddy, P, Improving the performance of Read-only Transactions through Speculation, 5th International Workshop on Databases in Networked Information Systems, DNIS 2007, LNCS vol. 4777, pp. 203-221 (October 2007)
- T. Ragunathan and P. Krishna Reddy, "Speculation-Based Protocols for Improving the Performance of Read-only Transactions", Poster Presentation, I-CARE, IBM-IRL Colloaborative Academia Research Exchange Pogramme, IBM Research India, Delhi, October 26, 2009.
- T. Ragunathan and P. Krishna Reddy, Speculation-Based Protocols for Improving the Performance of Read-only Transactions, COMAD 2009 Ph.D. Workshop, December 9th, 2009, at ISIM, Mysore
- T. Ragunathan, Extending Speculation for Improving the Performance of Read-only Transactions, EDBT 2008 Ph.D Workshop, Nantes, France. (March 2008)
- Improving the Performance of Read-only Transactions through Speculation, Poster Presentation, Techvista'07 at Microsoft India, Bangalore, January 23, 2007
- Performance Enhancement of Read-only Transactions Using Speculative locking Protocol, Presented in, Sixth Annual Inter Research Institute Student Seminar in Computer Science (IRISS 2007) held at IIIT, Hyderabad during January 4-5, 2007.
- G.Chandrasekaran and T.Ragunathan, Need for Specialised Courses in Computer Science and Engineering at P.G. Level, ISTE Newsletter Vol.XV(1), pp.13, 1995.
- G.Chandrasekaran, T.Ragunathan and M.K.Chandrasekaran, Need to Implement Practice Oriented Curriculum for Technical Education, Proceedings of National Seminar cum Workshop on Management of Technical Education, Bhopal, 1995.

Conference / Workshop / FDP organization

Organizing committee member of Fifth International Conference on Big Data Analytics - BDA 2017 to be conducted at IIIT, Hyderabad.

http://bda2017.iiit.ac.in/organizing_committee.html

Organizing committee member of PAKDD 2010 (prestigious international conference, organized for the first time in India)

http://www.iiit.ac.in/conferences/pakdd2010/organizing_committee.html

Convener for the workshops on “Multicore Architecture” and “Hadoop” held at Jawaharlal Nehru Institute of Advanced Studies, Hyderabad during 2012.

Convener for the faculty development programme on “Cloud Infrastructure and Services” conducted during May 2014 at ACE Engineering College, Hyderabad.

Courses Taught

Operating Systems
Database Systems
Data Structures and Algorithms
Computer Organization & Architecture
Computer Programming in C, C++
Java & Internet programming
Advanced Operating Systems
Advanced Computer Architecture
Web Technologies
Cloud Computing

B.Tech Projects & M.Tech Thesis Guided

Number of B.Tech Projects Guided	50
Number of M. Tech Thesis Works Guided	15

Awards Won

- a. **Cognizant Certified Faculty (CCF) Certificate and Best Architecture Award-** at the Cognizant Technology Solutions (CTS) conducted Advanced JAVA Workshop, April 2000.

b. **Sun Certified JAVA** faculty in the year 2000.

c. **National Merit Scholarship** award for class X

Responsibilities Held

- Coordinator for M.E.(Information Technology) course run by the college in association with RMIT, Australia from 2000 to June 2003.
- Coordinator for the Advanced JAVA Technology workshop conducted during April 2000.
- Coordinator for the CTS (Cognizant technology Solutions) Entry level training program organized by the CSE Dept. during May 2000.
- System Manager, Computer Center from 1-5-2002 to 1-12-03 and supervised software and hardware related activities of the college.
- Coordinator for Part-Time course in Computer Applications for the staff of local industries from 1994-1996.
- Computer Association in-charge for the period 1990-1995 and from July, 1998 to April ,2000.
- Audio - Visual Club in-charge for the period 1991-94.
- Executive Member of ISTE chapter of the College during 1990-1992.
- Staff Advisor for 1996-2000 batch of Computer Science & Engineering Students.
- Member, Quality Circle on Guidance & Counselling.
- Staff Advisor, fine arts club during 1989-97.
- Co-ordinator, MKU Youth Festival'97 at MSEC, Sivakasi.
- Member, College Bulletin Editorial Board for 1994.
- Executive council member, staff club of Mepco Schlenk Engg. College, sivakasi, during 1997-1999.
- In-charge for arranging Educational and Industrial visits from July, 1998 to July 1999.
- Secretary, staff club of MEPCO Schlenk Engg. College from September 1999 - 2002.
- Staff advisor for the final CSE students from 2000 - 2002.
- M.E (CSE) admission committee member for the CSE Department
- B.E Admission committee member for the CSE department
- Chairman Quality Circle on Sports from August 2002 to June 2004
- Coordinator for Faculty development programme on “Computer Architecture” during June 9-13.
- Conducting M.E (CSE) Entrance Examination for the Department from 2002 to 2004.
- Convener for “RACE 2010” technical symposium organized at ACE Engineering College.
- Convener for National Workshop on “Multicore architecture” organized at Jawaharlal Nehru Institute of Advanced Studies, Hyderabad during January 2012.
- NBA coordinator at Mohamed Sathak A. J. College of Engineering, Chennai, 2012-14
- University coordinator for Online Classes from March 2020.
- University coordinator for Placements from August 2019

- University Admission committee chairman from May 2020.
- Chairperson, SOP preparation for online classes from June 2020

Conferences / Summer / Winter Schools/Workshops Attended

- Training program on UNIX at Bangalore during 1990 for the period of 14 days.
- ISTE Annual Convention at Anna University, Chennai (Dec.91)
- ISTE Short course on "Training the Teachers" held at Mepco Schlenk Engineering College, Sivakasi during June 29-July 01, 1992.
- UGC Refresher course on "Advanced Electronic Systems" at Mepco Schlenk Engineering College, during Nov. 7-26, 1994.
- ISTE National seminar cum workshop on "Management of Technical Education" at MACT, Bhopal during Feb.14-15, 1995.
- Summer school on "AI & Expert Systems" at Ananthapur, JNTU College of Engineering, During May '95
- Workshop on INTERNET at Madurai Kamaraj University, March 26-27,1996.
- Workshop on "Software Technology Park" at Centre for Entrepreneur Development, Madurai on August 22,'97.
- Advanced JAVA Technology workshop conducted by CTS, Chennai during April 2000.
- AICTE sponsored winter course on "E-Commerce" at Kongu Engg. College, Perundurai during November 2000.
- Training program on JAVA during September 2001.
- Participated in workshop on Embedded Systems During 2002.(2 days program)
- Participated in Training program on "Rational Rose" May 2003 (2 days)
- Participated in "Multi Agents School" organized at IIIT Hyderabad during August '2004.
- Participated in International conference on "Foundations of software Technology and theoretical Computer Science organized at IIIT Hyderabad during December15-18,2005.
- Participated in international conference on Management of Data at IIIT Hyderabad, during December 20-22, 2005.
- Participated in International Workshop on Distributed Computing organized at IIT Kharagpur, during December 27-30, 2005.
- Participated in Sixth Annual Inter Research Institute Student Seminar in Computer Science (IRISS 2007) held at IIIT, Hyderabad during January 4-5.
- Participated in Techvista'07 organized by Microsoft India, at Bangalore , on January 23, 2007
- Participated in COMAD 2008 held at IIT, Bombay during December 17-19, 2008.
- Participated in COMAD 2009 held at ISIM, Mysore, during December 2009.
- Participated in PAKDD 2010 held at Hyderabad during June 2010.
- Participated in COMAD 2010 held at VNIT, Nagpur during December 2010.

- Participated in Indo-US Workshop on “Data Analysis of Large Scale Data” at IISC, Bangalore during December 2011.
- Participated in one day workshop on “Cloud Computing” at Hyderabad, during January 2012.
- Participated in “Architecture, Algorithms, Analytics for Big Data using Cloud and Distributed Computing (ABCD-2014)” workshop at NIT, Warangal during March 7th to March 11, 2014