Y NARASIMHULU

Research Scholar ⋄ University of Hyderabad

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Find out my work at https://github.com/Narasim

EDUCATION

Ph.D. January 2019 - Present

· Pursuing Ph.D.(Machine Learning), at **SCIS, University of Hyderabad**, Hyderabad.

M.Tech 2009 - 2011

· Post Graduation (Computer Science), from **St.John's College of Engineering and Technology**, Yemmiganur.

ACHIEVEMENTS

S.No.	Board and Exam	Award	Qualifying Year
1	UGC - NET	Junior Research Fellow(JRF)	July - 2018
2	UGC - NET	Assistant Professor	July - 2018
3	UGC - NET	Assistant Professor	December - 2017
4	UGC - NET	Assistant Professor	June - 2014
5	GATE	Computer Science	2019

RESEARCH EXPERIENCE

A **Junior Research Fellow** from January 2019 to December 2020 at University of Hyderabad.
A **Senior Research Fellow** from January 2021 to Present at University of Hyderabad.

RESEARCH INTERESTS

Clustering	Matrix Approximations
Nearest Neighbors	Scheduling in Fog Environment
Evolutionary Algorithms	Optimization Algorithms

WORK EXPERIENCE

Assistant Professor June 2011 - October 2012
1.4 Years

· Worked as "ASSISTANT PROFESSOR" at St. JOHNS' COLLEGE OF ENGG. AND TECHNOLOGY

Assistant Professor October 2012 - December 2018.
6.2 Years

· Worked as "ASSISTANT PROFESSOR" at RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN

SUBJECTS TAUGHT

Design and Analysis of Algorithms	Operating Systems
Data Structures	Database Management Systems
Advanced Data Structures and Algorithms	Java and Web Technologies
Web Programming	Mobile Application Development

PROFESSIONAL AFFILIATIONS

· Life Long Member of Indian Society for Technical Education(ISTE).

TECHNICAL STRENGTHS

Computer Languages:	C, Python, & C++
Subjects of Interest:	DAA , OS, DS, & DBMS
Programming	Numpy, Pandas, & sklearn

PAPERS PUBLISHED

· **Y Narasimhulu, M Sri Raghavendra, Priyanka Chawla (2021), "A Probability Based Joint-Clustering Algorithm for Application Placement in Fog-to-Cloud Computing"**, Accepted in IEEE 9th International Conference on Reliability, Infocom Technologies and Optimization (ICRITO-2021), Amity University, Uttar Pradesh. (https://www.amity.edu/aiit/icrito2021/Default.aspx).

· **Y Narasimhulu, Ashok Suthar, Raghunadh Pasunuri, V China Venkaiah (2021), "CKD-Tree: An Improved KD-Tree Construction Algorithm"**, Published in Proceedings of the International Semantic Intelligence Conference 2021(ISIC 2021), CEUR Conference Proceedings(CEUR-WS.org).

· **Narasimhulu Y., Pasunuri R., Venkaiah V.C. (2021), "Nearest Neighbors via a Hybrid Approach in Large Datasets: A Speed up."**, In: Chaki N., Pejas J., Devarakonda N., Rao Kovvur R.M. (eds) Proceedings of International Conference on Computational Intelligence and Data Engineering. Lecture Notes on Data Engineering and Communications Technologies, vol 56. Springer, Singapore.

· **Vardhani P.R., Priyadarshini Y.I., Narasimhulu Y. (2019), "CNN Data Mining Algorithm for Detecting Credit Card Fraud."**, Published in Soft Computing and Medical Bioinformatics. SpringerBriefs in Applied Sciences and Technology. Springer, Singapore.

· **K.Vinod Kumar Reddy, Y. Narasimhulu, "Proficiently Sharing Data Using Name Based Routing Algorithm in Big Data."**, Published in International Journal of Trend in Research and Development (IJTRD), ISSN:2394-9333, Special Issue - RIET-17 , December 2017.

CONFERENCES ATTENDED

· **"International Semantic Intelligence Conference(ISIC - 2021)"**, at MERI College of Engineering & Technology, New Delhi, India 2021.

· **"Third International Conference on Computational Intelligence & Data Engineering(ICCIDE - 2020)"**, at Vasavi College of Engineering(Autonomous), Hyderabad, Telangana, India 2020.

· **"Second International Conference on Cognitive Science and Articial Intelligance(ICCSAI - 2018)"**, at Sree Vidhyanikethan Engineering College(Autonomous), Tirupati, Andhra Pradesh India 2018.

· **"National Level Conference on Recent Innovations in Engineering and Technology-2017"**, at G.Pullaiah College of Engineering and Technology(Autonomous), Kurnool, Andhra Pradesh, India 2017.

WORKSHOPS CONDUCTED

· An A.P.S.S.D.C. 10 day training programme on **'C-Programming and Computer Fundamentals'** at 'Govt. Silver Jubilee College', Kurnool.

· An A.P.S.S.D.C. 10 day training programme on **'C-Programming and Computer Fundamentals'** at 'Sri Ramakrishna Degree College and National Degree Col- lege', Nandyal.

· An A.P.S.S.D.C. 1 day training programme on **'C-Programming and Data Structures'** at 'Chalapathi Institute of Engineering and Technology', Guntur.

· An A.P.S.S.D.C. 2 day training programme on **'C-Programming and Data Structures'** at 'QIS College of Engineering & Technology', Ongole.

· An A.P.S.S.D.C. 1 day campus training programme on **'C-Programming and Data Structures'** at 'QIS College of Engineering & Technology', Ongole.

PROJECTS WORKED - EXCLUDING THE WORKS PRESENTED IN THE SECTION 'PAPERS PUBLISHED'

DEEDSP: Deadline-aware and Energy-efficient Dynamic Service Placement in Integrated IoT and Fog Computing Environment

Fog computing has become adaptable and also as a promising infrastructure for providing elastic resources at the edge of the network. Fog computing reduces the transmission latency and consumption of bandwidth while processing the incoming requests from various Internet of Things (IoT) devices. Moreover, fog computing can support and facilitate geographically distributed applications with low and predictable latency. However, this technology also has significant research issues in its current stage. For example, whether a fog computing framework is suitable for implementing successful service location models could be an unresolved issue. We proposed a Deadline and Energy Efficient Dynamic Service Placement (DEEDSP) technique for fog computing that supports the placement of IoT based services. Further, hyper-heuristic algorithm based energy-efficient service placement technique is proposed to balance the energy-delay trade-off based on different service placement decision criteria (e.g., minimum response time or energy consumption). The proposed algorithm is able to minimize the energy consumption of the system dynamically while ensuring that the response time satisfies a given time constraint. Finally, proposed technique is evaluated in simulated fog computing environment and experimental results show that this technique performs better than state-of-the-art placement techniques in terms of energy and latency.

Paper got accepted in "**Transactions on Emerging Telecommunications Technologies**, Wiley", Worked unofficially.

Agglo-Kmeans: A Hybrid Method to Cluster Non-Convex Data Objects

Clustering is one of the important data mining methods for discovering knowledge in multidimensional data. The goal of clustering is to identify pattern or groups of similar objects within a data set of interest. Clustering non-convex data is one of the difficult tasks. Here, we present a hybrid method Agglo-Kmeans that uses Single-link Agglomerative hierarchical clustering and K-Means clustering to cluster non-convex data. The work also empirically proves that the agglomerative clustering does not try to minimize any objective function and no particular cluster quality measure is sufficient to prove the quality of the cluster. The results are compared with the contemporary K-Means algorithm and show that the proposed algorithm accuracy is better or at least equal.

Latency Aware Genetic Placement (LAGP) Algorithm in Fog Environment

Fog computing provides Quality of Service to latency-sensitive applications in bandwidth-constrained WAN networks. Fog environment consists of a set of IoT devices, fog nodes, and cloud node that gathers the sensed data, application requests from the user and decides to place the application modules in the suitable node. Fog framework uses the optimization algorithms to distribute the IoT application modules, based on functional requirements. This proposed work implements Genetic optimization techniques to the application module placement on fog networks. The proposed work analyses and examines the various IoT application latencies with the different optimization criteria. LAGP algorithm is able

to utilize the resources while ensuring that the response time satisfies a given time constraint. This LAGP used the genetic algorithm to dynamically determine the service placement in a fog environment.

An Unsupervised Variable length Genetic Fuzzy C-Means Algorithm on a Real Dataset

Clustering is a task of grouping similar objects based on the similarity in the data. The similar data objects are grouped in to clusters, where each cluster objects have similar properties. The clustering problem can be considered as an optimization problem. Genetic algorithms are good at finding a near optimal solution to an optimization problem. The current work proposes a genetic algorithm that uses the fuzzy clustering algorithm. The chromosome size is not fixed, and we try to guess the correct number of clusters in the data. Partition coefficient is used an optimization factor in the current work. We propose a novel crossover technique with varying chromosome sizes. The proposed work is run on real data and the results section show that it outperforms the straight forward clustering algorithm.

Semantic Web Implementation using OWL

This project, Web-based Gallery of Paintings, is a project aimed at management of Different paintings in a Web Gallery. A web based search interface is developed for searching over the existing Ontology of Altarpieces. This project holds the functionalities like searching over many altarpieces with different criteria and also adding, editing and deleting altarpieces. There are many such projects which make use of database, but this is one project under the light of research to check the performance of project with the use of Ontology and even to show the advantages of using Ontology. This project makes use of existing ontology and work on it as similar projects do on database and also makes work easier for users who are not familiar with protege and also for the users who find it diffcult to enter the data. The outcome of project is not only helpful for research but also for the users of Web Gallery of Altarpieces.

FUTURE WORKS - PLANNED

Matrix Factorization Using Gradient Descent
Rank-k Approximation Using SVD
Low-rank Binary Approximation

DECLARATION

Hereby declare that the information furnished above is true.

Y NARASIMHULU