

M.V. JUDY

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EDUCATION

Ph.D. (Computer Science) 2009

Master of Computer Applications (MCA) 2002

Designation/ Present Position: Professor & Head of the Department

Official Address for Communication:

Department of Computer Applications,
Cochin University of Science and
Technology, Cochin-682022 Tel:
0484-2576253
Fax-No: 0484-2577602

TEACHING AND RESEARCH EXPERIENCE: 20 YEARS

Professor Dec 2019 - Till Date

Department of Computer Applications,
Cochin University of Science and Technology (CUSAT),
Cochin, Kerala
www.cusat.ac.in

Associate Professor Dec 2016 - November 2019

Department of Computer Applications,
Cochin University of Science and Technology (CUSAT),
Cochin, Kerala
www.cusat.ac.in

Associate Professor and Head of the Department (H.O.D), Department of CS and IT Jun 2010 - Dec 2016

AMRITA University (Kochi Campus)
www.amrita.edu

Assistant Professor-III Aug 2003 - Nov 2009

SASTRA University, Thanjavur.
www.sastra.edu

Lecturer Aug 2002 - Aug 2003

Bishop Heber College, Trichy.
www.bhc.edu.in

SPECIALIZATION

- Big Data Analytics
- Data Mining
- Evolutionary Computation
- Computational Biology

PAPERS PUBLISHED IN INTERNATIONAL JOURNALS

- K. Haritha, S. Shailesh, M. V. Judy, KS Ravichandran, Raghunathan Krishankumar, Amir H Gandomi, "A novel neural network model with distributed evolutionary approach for big data classification", Scientific Reports, Nature Publishing Group UK, July 2023,
- Baazil P. Thampy, Ajil Kottayil, M. V. Judy, Rejoy Rebello, "MMA: A novel algorithm for efficient separation of the precipitation echoes from wind profiler radar's Doppler power spectrum", Measurement, Elsevier Publication, June 2023, SCI Impact factor: 5.6.
- Haritha, K., M. V. Judy, Konstantinos Papageorgiou, Elpiniki Papageorgiou, "Distributed Genetic Algorithm for Community Detection in Large Graphs with a Parallel Fuzzy Cognitive Map for Focal Node Identification", Applied Sciences, Multidisciplinary Digital Publishing Institute, January 2023, Scopus, Cite score - Q2, Impact factor: 2.9.
- Haritha, K., M. V. Judy, Konstantinos Papageorgiou, Vassilis C. Georgiannis, and Elpiniki Papageorgiou, "Distributed Fuzzy Cog- nitive Maps for Feature Selection in Big Data Classification", Algorithms , MDPI Publication, October 2022, ISSN 1999 4893, Cite Score - Q2.
- Baazil P. Thampy and M. V. Judy, "A convolution neural network approach to Doppler spectra classification of 205 MHz radar", Theoretical & Applied Climatology, Springer Publication, July 2022, SCI Impact factor: 3.409.
- S. Shailesh and M. V. Judy, "Understanding dance semantics using spatio-temporal features coupled GRU networks", Entertain- ment Computing, Elsevier Publication, May 2022, SCI Impact factor: 2.072.
- Gayathri Soman, M.V. Vivek, M.V. Judy, Elpiniki Papageorgiou & Vassilis C. Gerogiannis, "Precision-based Weighted Blending Distributed Ensemble Model for Emotion Classification" Algorithms, MDPI Publication, February 2022, ISSN 1999 4893, Cite Score - Q2
- Ajitha S , Akkara, John D and M.V. Judy "Identification of glaucoma from fundus images using deep learning techniques", Indian Journal of Ophthalmology, Wolters Kluwer–Medknow Publications, October 2021 ,ISSN 2702-2709, SCI Impact Factor: 1.848
- Sabeen Govind, P.V., Varghese, B.M. & Judy, M.V., "A high imperceptible data hiding technique using quorum function", Multimedia Tools and Applications, Springer Publications, May 2021, Scopus Q1, SCI impact factor: 2.313
- Ajitha S and M.V. Judy "A Novel Hybrid Approach To Blaze Out A New Path For Sustainable Results In Glaucoma Detection Using Fundus Images" International journal of World Review of Science, Technology and Sustainable Development, Inderscience Publishers, April 2021, Scopus Q2, SCI Impact Factor: 0.78,
- Sabeen Govind and M. V. Judy, "A Secure Framework for Remote Diagnosis in Health Care: A High Capacity Reversible Data Hiding Technique for Medical Images", Computers & Electrical Engineering, Elsevier Publications, January 2021, SCI Impact fac- tor: 2.67.
- Ajitha S. and M. V. Judy, "A Research on Glaucoma and Neuronal Image Disease Detection Using Various Techniques", TEST Engineering & Management magazine, The Mattingley Publishing Co., Inc., January 2020, ISSN: 0193 - 4120
- Shailesh S and Judy M V, "Automatic Annotation of Dance Videos Based On Foot Postures", Indian Journal of Computer Science And Engineering, Engg Journals Publications- January 2020, ISSN 0976 5166
- Shailesh, S. and Judy, M.V. "Computational Framework with Novel Features for Classification of Foot Postures in Indian Clas- sical Dance", Intelligent Decision Technologies, IOS Press, January 2020, ISSN -1872 4981,
- Nikhil K. S., Ambika B. & M. V. Judy, "Iterative Parallel Genetic Algorithm or detecting communities in Social Networks" ARPN Journal of Engineering & Applied Sciences Vol 12, No. 23 December 2017 ISSN: 1819-6608, SNIP: 2016-0.391
- Niranjan.R, Amal Prakash.N1, Sreeja Ashok , M.V. Judy, " Exploring Key Gene Interactions Using Particle Swarm Optimization", Int J Pharm Bio Sci, July 2016; 7(3): (B) 734 – 741, ISSN 0975-6299
- M. V. Judy , Autism spectrum disorders: Integration of the genome, transcriptome and the environment, Journal of the Neuro- logical Sciences, Elsevier Publication, ISSN: 0022-510X/15 May 2016, Vol 364, pp 167–176, SCI, Impact Factor : 2.126
- Suma, V. R., Renjith, S., Ashok, S., & Judy, M. V. (2016). Analytical Study of Selected Classification Algorithms for Clinical Dataset. Indian Journal of Science and Technology, Vol 9(11), March 2016, ISSN (Online) : 0974-5645
- Leena Aswathy Menon, R., SuryaPrabha, B., Sreeja Ashok , Judy, M.V., " Application of ant colony optimization in identifying the key gene interactions", International Journal of Control Theory and Applications , Volume 9, Issue 10, March 2016, ISSN

- **Alana Mathew, Reshmi Raj, Sreeja Ashok , M.V.Judy ,**"Exploring highly connected protein complexes in PPI networks ", International Journal of Control Theory and Applications, Volume 9, Issue 10, February 2016, ISSN 0974 - 5572
- **AiswaryaUday, Pooja Krishna C.U, Hari Narayanan A.G, M.V Judy** "Pathway Phenotype Association Using Improved Weighted Random Forest" European Journal of Scientific Research Volume 132 No 1, February 2016, ISSN 1450-216X
- **Divya Chandra Babu, Lekshmi A Kumar and M.V Judy Nair** "Wrapper Feature Selection Methods along with Support Vector Machine in Disease Classification" European Journal of Scientific Research Volume 132 No 4, February 2016, ISSN 1450-216X
- **Nanditha, J., Sruthi, K. N., Ashok, S., & Judy, M. V.** "Optimized Defect Prediction Model Using Statistical Process Control and Correlation-Based Feature Selection Method. In Intelligent Systems Technologies and Applications, Springer Publications, January 2016, ISSN: 2194-5357
- **Kumar, S. S., Krishnan, T., Ashok, S., & Judy, M. V.** Clutter Reduction in Parallel Coordinates using Binning Approach for Improved Visualization. International Journal of Electrical and Computer Engineering, Vol. 5, No. 6, December 2015, ISSN: 2088-8708
- **Sivasankar, S., Nair, S., & Judy, M. V.** "Feature Reduction in Clinical Data Classification using Augmented Genetic Algorithm", International Journal of Electrical and Computer Engineering, Official Publication of Advanced Engineering and Science (IAES), December 2015, ISSN: 2088-8708(6)
- **Ashok, S., & Judy, M. V. (2015),** A novel iterative partitioning approach for building prime clusters International Journal of Advanced Intelligence Paradigms, Inderscience Publishers,May 2015,ISSN:1755-0386, E-ISSN:1755-0394,
- **Sonumol, N. S., Uma, V. R., Ashok, S., & Judy, M. V. (2015).** Community Detection in Multidimensional Genomic Dataset. International Journal of Artificial Intelligence, IJAI CESER PUBLICATIONS),March 2015, ISSN 0974-0635,
- **AshutoshRajan and M V Judy** "An Enhanced Map Reduce Framework for Improving the Performance of Massively Scalable Private Clouds". International Journal of Computer Applications (IJCA). Proceedings on AICWIC(3):24-26,Published by Foundation of Computer Science,January 2013, ISSN 0975 - 8887
- **Judy, M.V., B.Ramadoss.,** "An Enhanced Solution to the Protein Folding Problem Using a Hybrid Genetic Algorithm With G-Bit improvement Strategy", International Journal of Modeling and Optimization, June 2012, ISSN: 2010-3697
- **Judy, M.V., Ravichandran, K.S & K.Murugesan,** "A multi-Objective Evolutionary algorithm for Protein Structure Prediction with Immune Operators", International journal, Computer Methods in Biomechanics and Biomedical Engineering, August 2009, ISSN: 1476-8259, Impact Factor: 1.573)

PAPERS PUBLISHED AS CHAPTERS IN INTERNATIONAL BOOKS/ SERIES/DIGITAL LIBRARY:

- **Bineetha Vijayan, Gayathri Soman, Vivek M.V., and M.V. Judy,** "A distributed ensemble machine learning technique for emotion classification from vocal cues" , Proceedings of BDA 2022, Lecture Notes in Computer Science (LNCS, volume 13773), Publisher - Springer, eBook ISBN 978-3-031-24093-5, https://doi.org/10.1007/978-3-031-24094-2_9
- **Sabeen Govind, M.V. Judy,** "A block based data hiding technique using convolution neural network" , Proceedings of ICICV-2021, Book Title - Innovations in Computational Intelligence and Computer Vision, Series Volume – 1424, Publisher - Springer, eBook ISBN 978-981-19-0475-2, https://doi.org/10.1007/978-981-19-0475-2_1
- **Divyabarathi G , Shailesh S ,Judy M V and R Krishnakumar,** "A Novel Ensemble Method for Underwater Mines Classification", Lecture Notes on Data Engineering and Communications Technologies,(LNDECT,volume 96) -2021, Publisher - Springer, eBook ISBN 978-981-16-7167-8, https://doi.org/10.1007/978-981-16-7167-8_4
- **Shailesh S , Anantha Krishnan M , and Judy M V,** "Classification of Sequence Data Using LSTM: An Application on Chaotic Sequences", Lecture Notes on Smart Innovation, Systems and Technologies book series (SIST,volume 206)-2021, Publisher - Springer, eBook ISBN 978-981-15-9829-6, https://doi.org/10.1007/978-981-15-9829-6_20
- **S Shailesh , M.V. Judy,** "Capsule Networks for Classifying Conflicting Double-Handed Classical Dance Gestures" , Lecture Notes on Data Engineering and Communications Technologies, Series - LNDECT 2021, Series Volume – 63, Publisher - Springer Singapore, eBook ISBN 978-981-16-0081-4, https://doi.org/10.1007/978-981-16-0081-4_4
- **PV Sabeen Govind, MY Shiju Thomas. and Judy M. V.,"** A Novel Data Hiding Technique with High Imperceptibility Using a 3-Input Majority Function and an Optimal Pixel Adjustment", Part of Advances in Intelligent Systems and Computing book series (AISC,volume 1133)-2021 Publisher - Springer, Singapore, eBook ISBN 978-981-15-3514-7, <https://doi.org/10.1007/978-981-15-3514-7>

- **Haritha K. and Judy M. V.**, " Fuzzy Cognitive Map-Based Genetic Algorithm for Community Detection", Progress in Advanced Computing and Intelligent Engineering. Advances in Intelligent Systems and Computing, vol 1198-2020. Publisher - **Springer, Singapore**, eBook ISBN 978-981-15-6584-7, https://doi.org/10.1007/978-981-15-6584-7_39
- **Judy M.V., Soman G.** " Parallel Fuzzy Cognitive Map Using Evolutionary Feature Reduction for Big Data Classification Problem". In: Mandal J., Sinha D. (eds) Social Transformation – Digital Way. CSI 2018. Communications in Computer and Information Science, vol 836. **Springer, Singapore**. [http://link-springer-com-443.webvpn.f.jmu.edu.cn/chapter/10.1007%2F978-981-13-1343-1_22](http://link.springer.com-443.webvpn.f.jmu.edu.cn/chapter/10.1007%2F978-981-13-1343-1_22)
- **Prabhakar N.P., Rani D., Hari Narayanan A.G., Judy M.V.** " Analyzing the Impact of Software Design Patterns in Data Mining Appli- cation". In: Dash S., Vijayakumar K., Panigrahi B., Das S. (eds) Artificial Intelligence and Evolutionary Computations in Engineering Systems. Advances in Intelligent Systems and Computing, vol 517. (2017) **Springer, Singapore**. Print ISBN 978-981-10-3173-1, On- line ISBN 978-981-10-3174-8 [htt://www.springerprofessional.de/en/analyzing-the-impact-of-software-design-patterns-in-data-mining-/13299752](http://www.springerprofessional.de/en/analyzing-the-impact-of-software-design-patterns-in-data-mining-/13299752)
- **Asok A., Jisha T.J., Ashok S., Judy M.V.** "Integrated Framework Using Frequent Pattern for Clustering Numeric and Nominal Data Sets". In: Satapathy S., Joshi A., Modi N., Pathak N. (eds) Proceedings of International Conference on ICT for Sustainable Develop- ment. Advances in Intelligent Systems and Computing, vol 408, (2016) **Springer, Singapore.**, Print ISBN978-981-10-0127-7, Online ISBN978-981-10-0129-1, https://link.springer.com/chapter/10.1007/978-981-10-0129-1_5
- **Sreeja Ashok, Judy M.V.**. Process Flow for Information Visualization in Biological Data. In: Satapathy S., Bhatt Y., Joshi A., Mishra D. (eds) Proceedings of the International Congress on Information and Communication Technology. Advances in Intelligent Sys- tems and Computing, vol 438,(2016) **Springer, Singapore.**, Print ISBN 978-981-10-0766-8 Online ISBN 978-981-10-0767-5 https://link.springer.com/chapter/10.1007/978-981-10-0767-5_6
- **Nair, D. P., Dayanand, K., & Judy, M. V.** Survey on Tag SNP selection methods using soft computing techniques. In Proceedings of the Third International Symposium on Women in Computing and Informatics (pp. 722-728), (2015, August). **ACM Digital Library** ISBN: 9781450333610 <https://dl.acm.org/doi/10.1145/2791405.2791557>
- **Narayanan A.G.H., Krishnakumar U., Judy M.V.**. An Enhanced MapReduce Framework for Solving Protein Folding Problem Using a Parallel Genetic Algorithm. In: Satapathy S., Avadhani P., Udgata S., Lakshminarayana S. (eds) ICT and Critical Infrastructure: Proceedings of the 48th Annual Convention of Computer Society of India- Vol I. Advances in Intelligent Systems and Computing, vol 248. (2014) **Springer, Cham**. Print ISBN978-3-319-03106-4, Online ISBN 978-3-319-03107-1. [htt://link.springer.com/chapter/10.1007/978-3-319-03107-1_27](http://link.springer.com/chapter/10.1007/978-3-319-03107-1_27)
- **Hari Narayanan A.G., Krishankumar U., Judy M.V.**, Constructing a personalized e-learning system for students with autism based on soft semantic web technologies, IEEE International Conference on Technology Enhanced Education, January 2012 published in **IEEEExplore** Print ISBN: 978-1-4577-0725-4 <https://ieeexplore.ieee.org/document/6208625>
- **Judy, M.V. and Ravichandran, K.S.** A solution to protein folding problem using a genetic algorithm with modified keep best re- production strategy IEEE Congress on Evolutionary Computation,(2007),.Library of Congress: 2007928155, IEEE Xplore, ISBN: 1-4244-1340-0, Volume, Issue, Page(s):4776 – 4780. <https://ieeexplore.ieee.org/document/4425099/>

PAPERS PUBLISHED IN INTERNATIONAL & NATIONAL CONFERENCES

- **Baazil P. Thampy, Judy M. V and Ajil Kottayil**, "Wind profiler Doppler power spectrum segmentation using U-Net" , in Interna- tional Conference on Advances in Intelligent Computing and Applications (AICAPS), Kochi, India, 1-3, February 2023
- **Divyabarathi G, Shailesh S, Judy M V** "Object Classification in Under Water SONAR Images Using Transfer Learning Based En- semble Model " in International Conference on Advances in Computing and Communications (ICACC - 2021), Rajagiri School of Engineering and Technology, Kochi, Kerala, 21-23, October 2021
- **Divyabarathi G, Shailesh S, and Judy M V**, "Survey on Deep Learning Techniques Used for Classification of Underwater Sonar Images" in International Conference on IoT, Social, Mobile, Analytics Cloud in Computational Vision & Bio-Engineering (ISMAC- CVB 2020), St. Mother Theresa Engineering College, Tuticorin, Tamil Nadu, 29-30, October 2020
- **Ajitha S and M.V. Judy**, "A Novel Approach For Glaucoma Detection" in International Conference on Intelligent Computing and Control Systems [ICICCS 2019] held on 15-17 May 2019 at Vaigai College of Engineering, Madurai, Tamil Nadu, India.. Paper under publication in IEEEExplore

- **Ajitha S and M.V. Judy, "FR CNN Classification For the Recognition Of Glaucoma"**, International Conference on computing communication and energy systems 2020, MEAC Perinthalmanna 26-27 February 2020
- **Ramesh R and Judy M V , "Clustering Analysis of Epidemic Dataset using Distributed Platform"**, International conference on Advances in computing, communication, embedded and secure systems, (ACCESS 2020), 28-30th May, 2020, Adi Shankara Institute of Engineering and Technology, Kalady, India
- **Judy M. V. and Gayathri Soman , "Analysing Disease Spread In Animal Social Networks By Using Evolutionary Modular Structure Detection"** 4th International Conference on ICT for Sustainable Development (ICT4SD 2019), held in Goa, India, on 5–6 July 2019
- **Ramesh R and Judy M.V, " Leveraging Big Data Analytics Frameworks for Computational Epidemiology"**, in International Conference on Intelligent Computing and Signal Processing (IntelliSig 2019) during 8-9 March 2019 conducted by Central University of Kerala, India
- **M. V. Judy, "Data Mining in Library Sciences"** , National Conference on Open Data and Data Repositories, University Library, CUSAT, March 06-08, 2018
- **Sreeja Ashok and Dr. M.V.Judy "Graph-Based Clustering Approach For Identifying Functionally Coupled Genes "** is accepted and presented in the 2nd International Conference on Structural and Functional Genomics (ICSAFG-2016) at School of Chemical and Biotechnology, SASTRA University, Thanjavur , August 19-20, 2016
- **Thushara Vijayakumar and Dr. M.V.Judy " Computational Pathway Analysis for Complex Disorders"** is accepted and presented in the 2nd International Conference on Structural and Functional Genomics (ICSAFG-2016) at School of Chemical and Biotechnology, SASTRA University, Thanjavur , August 19-20, 2016.
- **M.R.Bivin, M.V.Judy and B.Ramadoss, "A Neutrosophic Cognitive Map Based Approach for the Prediction of Severity of Autism Spectrum Disorder "** at Third International conference on Bioinformatics (IFIP), September 2013, NIT, Bhopal.
- **SumeshS, C. Tripti and M.V.Judy, "A Hybridized Approach for Network Intrusion Detection System"**, National Conference on Applications of Data Mining in Management of Metabolic and Degenerative Disorders (2012) , Amrita School of Arts and Sciences, Mysore, India.
- **Hari Narayanan A G & M.V.Judy," Analysis of Soft Computing Techniques used in Mining Health Care Data"**, National Conference on Applications of Data Mining in Management of Metabolic and Degenerative Disorders (2012) , Amrita School of Arts and Sciences, Mysore, India.
- **M.V.Judy, K.S.Ravichandran, and K.Murugesan, "An Enhanced Multi-Objective Evolutionary Approach for Protein Structure Prediction "** IEEE International Advanced Computing Conference,(2009)Thapar University, Delhi, India.
- **Judy M.V, K.S.Ravichandran and K.Murugesan, "A Solution to the Protein Folding Problem using an Improved GA"** BEST PAPER AWARD in CIT-BIOTECH (2007), An International conference organized by CIT, Coimbatore and TNAU
- **Judy M.V, & K .S .Ravichandran, "Investigation of Large Scale Prediction of Disulphide Bridges Using Soft Computing Techniques"**, NCCTS07, National Conference organized by Sri Ramakrishna Engineering College, (2007) Coimbatore, India
- **Judy M V, "Making Industry Friendly Curriculum"** , at the National Level Seminar held on May 2006, at SLCS College, Madurai.

FUNDED PROJECT

Co-PI

Establishment of Bioinformatics Centre, CUSAT

Amount: 79,00,000

Status : Ongoing

Department of Biotechnology, Govt of India

Principal Investigator

Visual Enhancement of Underwater Optical Images and,

Accuracy Improvement of Target Detection in SONAR Images

Amount: 25,00,500

Status : Ongoing

Department of Science and Technology
Interdisciplinary Cyber-Physical System

Supervisor

Big data analytics research Facility

CUSAT – State Plan Grants 2016-2017

Amount: 40,00,000
Status : Ongoing

Principal Investigator
Development of a computational tool, algorithms for Gene finding,

Department of Science and Technology
Cognitive Science Division

Mapping of genotype – phenotype based on classification of clinical data for Autism spectrum disorder.

Amount: 28,55,084
Status : Completed

Principal Investigator
Implementation of enhanced
Deep learning algorithms for
Big data analytics in computational epidemiology
Amount: 4,00,000
Status : Completed

CUSAT – State Plan Grants 2016-2017

Mentor
Automated real time traffic control system
Amount: 1,00,000
Status : Completed

IEDC - CUSAT

Co-PI
Securing Clinical Information in Medical Images
Amount: 50,000
Status : Completed

Rajagiri Hospital/Rajagiri School of Social Sciences

AWARDS RECEIVED

- **Distinguished Young Faculty Award** from Cochin University of Science and Technology for the year 2022.
- **Longest Continuous SBC Award** from Computer Society of India (CSI), for year 2015 and 2016.
- **Significant Contribution** under Computer Society of India Service, 2016.

ROLES AND RESPONSIBILITIES HELD/HOLDING

- Member, Academic Council, Cochin University of Science and Technology.
- Member, Board of Studies, Computer Applications, Cochin University of Science and Technology.
- Member, Board of Studies, Library and Information Sciences, Cochin University of Science and Technology.
- Member, Board of Studies in Engineering (PG), University of Calicut.
- Technical Committee Member, Sree Sankara University, Kalady.
- Subject Expert, Interview Board for Baharathiya Vidya Bhavan.
- Expert Visiting Committee Member (EVC) of AICTE.
- Reviewer for international journal "Applied soft computing" , Elsevier publication and Research in Autism Spectrum Disorder, Elsevier publication.
- Former Head Of the Department (H.O.D) of Computer Science and Information Technology, Amrita School of Arts and Sciences, Amrita VishwaVidyaapeetham University, Kochi (till December 2016)
- Member of Board of studies for Amrita School of Engineering, Master of Computer Application, (MCA) of Amrita VishwaVidyaapeetham University (till December 2016).
- Chairperson of the Board of Studies for Arts and Sciences, (BCA, MSc. Computer Science) of Amrita VishwaVidyaapeetham university (till December 2016).
- Research supervisor - Amrita University (till December 2016).

- Doctoral Committee Member for research scholars registered under Amrita University (till December 2016).
- Student Branch Counselor (SBC) for the Computer Society of India (CSI) student chapter, ASAS, Kochi (December 2016).
- TCS Research Scholar Program - MoU with TCS Innovation Labs for a sponsored Research Scholar (Technology Transfer) (December 2016).
- Adjunct Faculty for BITS PILANI Work Integrated Learning Programme (WILP) (December 2016).

PARTICIPATION IN INTERNATIONAL/NATIONAL SEMINARS/WORKSHOPS

Convener for national workshops / conferences / seminars

More than 50

Invited talks/Session chairs in national and international conferences/workshops

More than 60