

M.V. JUDY

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| judynair@cusat.ac.in

EDUCATION

Ph.D (Computer Science)	2009
M.Phil (Computer Science)	2005
Master of Computer Applications (MCA)	2002

Designation/ Present Position : Professor

Official Address for Communication:

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

TEACHING AND RESEARCH EXPERIENCE: 18 YEARS

Professor Department of Computer Applications, Cochin University of Science and Technology (CUSAT), Cochin, Kerala www.cusat.ac.in	Dec 2019 - Till Date
Associate Professor Department of Computer Applications, Cochin University of Science and Technology (CUSAT), Cochin, Kerala www.cusat.ac.in	Dec 2016 - November 2019
Associate Professor and Head of the Department (H.O.D), Department of CS and IT AMRITA University (Kochi Campus) www.amrita.edu	Jun 2010 - Dec 2016
Assistant Professor-III SASTRA University, Thanjavur. www.sastra.edu	Aug 2003 - Nov 2009
Lecturer Bishop Heber College, Trichy. www.bhc.edu.in	Aug 2002 - Aug 2003

SPECIALIZATION

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

PAPERS PUBLISHED IN INTERNATIONAL JOURNALS

- **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, An International Journal, Elsevier, SCI(2021), Impact factor: 2.67.
- **Sabeen Govind, P.V., Varghese, B.M. & Judy, M.V.**, "A high imperceptible data hiding technique using quorum function", Multimedia Tools and Applications (2021), Springer, Scopus Q1, SCI impact factor: 2.313
- **M V Judy**, **Autism spectrum disorders: Integration of the genome, transcriptome and the environment**, Journal of the Neurological Sciences, Elsevier Publication, ISSN: 0022-510X15 May 2016, Vol 364, pp 167–176, SCI, Impact Factor : 2.126
- **Ajitha S , Akkara, John D and "Identification of glaucoma from fundus images using deep learning techniques"** in Indian Journal of Ophthalmology, Volume 60 October 2021 ,ISSN 2702-2709, Impact Factor: 1.848
- **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, (2009) 1476-8259, Volume 12, Issue 4, August 2009, Pages 407 – 413, ISSN: 1476-8259 (electronic) 1025-5842 (paper) , (Impact Factor: 1.573) © Thomson Scientific Journal Citation Reports 2008
- **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(2021), Scopus Q2, Impact Factor:0.78, Inderscience Publishers
- **Ajitha S and M V. Judy**, "A Research on Glaucoma and Neuronal Image Disease Detection Using Various Techniques", TEST Engineering & Management magazine ISSN: 0193 - 4120, (The Mattingley Publishing Co., Inc.), 3756 Grand Ave, Suite 205, Oakland, CA 94610-1545, January - February 2020 ISSN: 0193 - 4120 Page No. 9152 – 9167
- **Shailesh, S. and Judy, M.V. "Computational Framework with Novel Features for Classification of Foot Postures in Indian Classical Dance"**, Intelligent Decision Technologies, IOS Press ISSN -1872 4981, Jan. 2020, 119 – 132.
- **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- ISSN 0976 5166 Vol. 11 No. 1 Jan-Feb 2020
- **Nikhil K S, Ambika B & M V Judy**, "Iterative Parallel Genetic Algorithm or detecting communities in Social Networks" ARPJN Journal of Engineering & Applied Sciences Vol 12, No. 23 December 2017 ISSN: 1819-6608, SNIP: 2016-0.391
- **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) ISSN: 2088-87085(6), December 2015, pp. 1516-1524, Volume 5. No. 6
- **Sonumol, N. S., Uma, V. R., Ashok, S., & Judy, M. V. (2015).** **Community Detection in Multidimensional Genomic Dataset.** International Journal of Artificial Intelligence, Copyright 2015 by IJAI (CESER PUBLICATIONS), ISSN 0974-0635, March 2015, Volume 13, Issue Number 2
- **Ashok, S., & Judy, M. V. (2015), A novel iterative partitioning approach for building prime clusters** International Journal of Advanced Intelligence Paradigms, Inderscience Publishers, ISSN:1755-0386, E-ISSN:1755-0394, May 2015, pp 313 -325, Vol 7 (3/4)
- **Nanditha, J., Sruthi, K. N., Ashok, S., & Judy, M. V. (2016).** **Optimized Defect Prediction Model Using Statistical Process Control and Correlation-Based Feature Selection Method.** In Intelligent Systems Technologies and Applications (pp. 355-366). Springer International, ISSN: 2194-5357
- **Kumar, S. S., Krishnan, T., Ashok, S., & Judy, M. V. (2015).** **Clutter Reduction in Parallel Coordinates using Binning Approach for Improved Visualization.** International Journal of Electrical and Computer Engineering, Vol. 5, No. 6, December 2015, pp. 1564 -1568 ISSN: 2088-8708
- **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 (Print) : 0974-6846 ISSN (Online) : 0974-5645
- **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, 2016, Pages 4269-4276 , ISSN 0974 - 5572
- **Leena Aswathy Menon, R., SuryaPrabha, B., Sreeja Ashok , Judy, M.V., " Application of ant colony optimization in identifying the key geneinteractions"**, International Journal of Control Theory and Applications , Volume 9, Issue 10, 2016, Pages 4211-4219,ISSN

- **Niranjan.R, Amal Prakash.N1,Sreeja Ashok , M.V.Judy,” Exploring Key Gene Interactions Using Particle Swarm Optimization”**, Int J Pharm Bio Sci 2016 July ; 7(3): (B) 734 – 741, ISSN 0975-6299
- **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, ISSN 1450-216X
- **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, ISSN 1450-216X
- **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, January 2013., January 2013. Published by Foundation of Computer Science, New York, USA, ISSN 0975 - 8887

PAPERS PUBLISHED IN NATIONAL JOURNALS

- **Sreeja Ashok , M V Judy and N.Thushara Vijayakumar "Information Visualization in Gene Expression Data"** in Computer Society of India Communications (CSIC), November 2014 issue ISSN 0970-647X
- **Sreeja Ashok, N.Thushara Vijayakumar and M V Judy "Biological Data Science: Workflow"** in Computer Society of India Communications (CSIC), November 2015, ISSN 0970-647X
- **Judy M.V, Ravichandran K.S, & K.Murugesan, “Enhancement of Protein Folding Problem using a Genetic Algorithm with Introns”** Published in International journal of Computational Intelligence in Bio-informatics, Volume 1 Number1(2008) pp.35-43, ISSN:0973-385X
- **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 2012, Vol.2(3): 356-359 ISSN: 2010-3697

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

- **S Shailesh , M.V. Judy**, “Capsule Networks for Classifying Conflicting Double-Handed Classical Dance Gestures” , Lecture Notes on , Book Title - Data Engineering and Communications Technologies, Series - LNDECT, Series Volume – 63, Publisher - **Springer Singapore**, eBook ISBN 978-981-16-0081-4, <https://doi.org/10.1007/978-981-16-0081-4>
- **Sabeen Govind, M.V. Judy**, “A Novel Data Hiding Technique with High Imperceptibility Using a 3-Input Majority Function and an Optimal Pixel Adjustment” , Proceedings of AIDE, Book Title - Advances in Artificial Intelligence and Data Engineering, Series - Advances in Intelligent Systems and Computing, Series Volume – 1133, Publisher - **Springer Singapore**, eBook ISBN 978-981-15-3514-7, <https://www.springer.com/gp/book/9789811535130>
- **Haritha K. and Judy M. V.**, Haritha K., Judy M.V. (2021) Fuzzy Cognitive Map-Based Genetic Algorithm for Community Detection. In: Panigrahi C.R., Pati B., Mohapatra P., Buyya R., Li KC. (eds) Progress in Advanced Computing and Intelligent Engineering. Advances in Intelligent Systems and Computing, vol 1198. **Springer, Singapore**. https://doi.org/10.1007/978-981-15-6584-7_39
- **Judy M.V., Soman G.** (2018) 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.fjmu.edu.cn/chapter/10.1007%2F978-981-13-1343-1_22
- **Asok A., Jisha T.J., Ashok S., Judy M.V.** (2016) 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 Development. Advances in Intelligent Systems and Computing, vol 408. **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_55
- **Sreeja Ashok, Judy M.V.** (2016) 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 Systems and Computing, vol 438. **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_56
- **Prabhakar N.P., Rani D.**, Hari Narayanan A.G., Judy M.V. (2017) Analyzing the Impact of Software Design Patterns in Data Mining Application. In: Dash S., Vijayakumar K., Panigrahi B., Das S. (eds) Artificial Intelligence and Evolutionary Computations in En-

gineering Systems. Advances in Intelligent Systems and Computing, vol 517. **Springer, Singapore.**, Print ISBN 978-981-10-3173-1, Online ISBN 978-981-10-3174-8 <https://www.springerprofessional.de/en/analyzing-the-impact-of-software-design-patterns-in-data-mining-/13299752>

- **Nair, D. P., Dayanand, K., & Judy, M. V.** (2015, August). 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). **ACM Digital Library** ISBN: 9781450333610 <https://dl.acm.org/doi/10.1145/2791405.2791557>
- **Narayanan A.G.H., Krishnakumar U., Judy M.V.** (2014) 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. **Springer, Cham.** Print ISBN978-3-319-03106-4 , Online ISBN 978-3-319-03107-1. https://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 **IEEE Xplore** 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 reproduction 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 CONFERENCES

- **Divyabarathi G , Shailesh S ,Judy M V "Object Classification in Under Water SONAR Images Using Transfer Learning Based Ensemble 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 ,Judy M V and R Krishnakumar "A Novel Ensemble Method for Underwater Mines Classification"** in International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2021), RVS College of Engineering and Technology, Coimbatore, Tamil Nadu., 20-21, August 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
- **Shailesh S , Anantha Krishnan M , and Judy M V, "Classification of Sequence Data Using LSTM: An Application on Chaotic Sequences"** in International Conference on Modeling Simulation and Optimization 2020 (CoMSO2020), National Institute Of Technology, Silchar, 3-5, August 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 IEEE Xplore
- **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 FEB 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 (IntelliSig2019) during 8-9 March 2019 conducted by Central University of Kerala, India
- **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 Neurosophic Cognitive Map Based Approach for the Prediction of Severity of Autism Spectrum Disorder** " at Third International conference on Bioinformatics (IFIP), September 2013, NIT, Bhopal.
- **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

PAPERS PUBLISHED IN NATIONAL CONFERENCES

- **SumeshS, C. Tripthi 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.
- **M. V. Judy**, " **Data Mining in Library Sciences**" , National Conference on Open Data and Data Repositories, University Library, CUSAT, March 06-08, 2018
- **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.
- **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

- | | |
|---|---|
| <p>Co-PI
Establishment of Bioinformatics Centre, CUSAT
<i>Amount</i> : 79,00,000
<i>Status</i> : <i>Ongoing</i></p> | <p>Department of Biotechnology, Govt of India</p> |
| <p>Principal Investigator
Visual Enhancement of Underwater Optical Images and ,
Accuracy Improvement of Target Detection in SONAR Images
<i>Amount</i> : 25,00,500
<i>Status</i> : <i>Ongoing</i></p> | <p>Department of Science and Technology
Interdisciplinary Cyber-Physical System</p> |
| <p>Supervisor
Big data analytics research Facility
<i>Amount</i> : 40,00,000
<i>Status</i> : <i>Ongoing</i></p> | <p>CUSAT – State Plan Grants 2016-2017</p> |
| <p>Principal Investigator
Development of a computational tool, algorithms for Gene finding,
mapping of genotype – phenotype based on classification of clinical data for Autism spectrum disorder.
<i>Amount</i> : 28,55,084
<i>Status</i> : <i>Completed</i></p> | <p>Department of Science and Technology
Cognitive Science Division</p> |

Principal Investigator

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

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

- **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 VishwaVidyapeetham University, Kochi(till December 2016)
- Member of Board of studies for Amrita School of Engineering, Master of Computer Application, (MCA) of Amrita VishwaVidyapeetham university (till December 2016).
- Chairperson of the Board of Studies for Arts and Sciences ,(BCA, MSc. Computer Science) of Amrita VishwaVidyapeetham 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