Dr. B. Kannan

Designation	Associate Professor & Head
Address	Department of Computer Applications Cochin University of Science and Technology, Kochi
Phone	0484 2576253 (Office) 91 9895363612 (Mobile)
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APPOINTMENTS

Head of the Department,Department of Computer Applications — 2013 June onwards
Cochin University of Science and Technology

Associate Professor — 2007 December onwards
Cochin University of Science and Technology

Reader — 2004- 2007
Cochin University of Science and Technology

Lecturer (Sr. Scale) — 1999- 2004
Cochin University of Science and Technology

Lecturer — 1999
Cochin University of Science and Technology

Lecturer — 1991-1999
Department of Collegiate Education, Kerala

Junior Lecturer — 1989
Department of Collegiate Education, Kerala

EDUCATION

PhD Futures Studies with Specialization in Graph Algorithms — 2006
University Of Kerala

M.Tech. Computer & Information Science — 1987
Cochin University of Science and Technology

M.Phil Mathematics — 1983

University Of Kerala
M.Sc. Mathematics 1982
University Of Kerala

RESEARCH INTERESTS

- **Thesis Title:** *"Algorithms for median computation in median graphs and their generalizations using consensus strategies"* University of Kerala, *2006*
- **Areas of Interest:** Algorithms, Graph Theory, Machine Intelligence, Image Processing, Natural Language Processing, Assistive Technologies

ORGANIZATIONAL POSITIONS HELD

- **Co-ordinator**, IIT Bombay Remote Centre, Cochin University of Science & Technology, Kochi
- **Member, Academic Council**, Cochin University of Science & Technology, Kochi
- **Member, Academic Committee**, Cochin University of Science and Technology, Kochi
- **Member, Board of Studies**, Computer Applications, Cochin University of Science and Technology, Kochi
- **Member, Board of Studies**, Computer Science, Cochin University of Science and Technology, Kochi
- **Member, Board of Studies**, Computer Science, Mahatma GandhiUniversity, Kottayam
- **Member, Board of Studies**, Computer Science and Applications, University of Calicut
- **Member, Board of Studies**, C.M.S. College (Autonomous), Kottayam
- **Member, Board of Studies**, S.B. College (Autonomous), Changanasseri
- **Member, Board of Studies**, S.H. College Thevara (Autonomous), Kochi
- **Member, Board of Studies**, St. Teresa's College (Autonomous), Kochi
- **Member, Board of Studies**, Rajagiri College of management and Applied Sciences, Kochi
- **Member, NBA Advisory Committee**,Adi Shankara Institute of Engineering and Technology, Kalady, Ernakulam

OTHER ROLES

- **Chairman**, Ph. D Qualifying Examination and Viva-voce in Computer Science, MG University, Kottayam
- **Chairman**, First and Third Semester Examinations, M Sc. Computer Science and Information Security Examinations, IIITMK, Thiruvananthapuram

- **Subject Expert**, Doctoral Committee meeting, Dept. of Computer Science, Karpagam University, Coimbatore
- **Subject Expert**, Interview Board for post of Assistant Professor in Engineering College, LBS Centre for Science and Technology, Thiruvananthapuram
- **Interview Board Member**, Selection committee of SPEED-IT Fellowship, Department of Future Studies, University of Kerala, Thiruvananthapuram
- **Subject Expert**, Interview Board, Research Admission Committee, Dept. of Computer Science, University of Calicut
- **Doctoral Committee Member**, School of Computer Sciences, MG University, Kottayam
- **External Examiner**, PhD Open Defense, School of Computer Sciences, MG University, Kottayam
- **Examiner**, Viva-voce, Ph. D Qualifying Examination, M G University, Kottayam
- **Examiner**, Ph. D Preliminary Examination in Information Technology, Kannur University
- **External Examiner**, Final Semester Dissertation Evaluation and Viva-voce, PGDKM, Department of Future Studies, University of Kerala, Thiruvananthapuram
- **External Examiner**, Viva-voce, M. Tech, Anna University, Chennai
- **External Examiner**, Final Semester Dissertation Evaluation and Viva-voce, M. Tech in Technology Management, Department of Future Studies, University of Kerala, Thiruvananthapuram
- **External Examiner**, Project Evaluation and Viva-voce, VIth Semester MCA, Centre for Computer Science and Information Technology, Dr. John Mathai Centre, Thrissur
- **External Examiner**, IVth Semester M Sc. Computer Science, Project evaluation and Viva-voce, School of Computer Sciences, MG University, Kottayam
- **External Examiner**, IVth Semester M. Tech Computer Science, Project evaluation and Viva-voce, Department of Computer Science, University of Kerala, Thiruvananthapuram

MEMBER OF PROFESSIONAL BODIES

- **Member:** Association for Computing Machinery (ACM)
- **Life Member:** Computer Society of India (CSI)
- **Life Member:** Indian Science Congress Association (ISCA)
- **Vice-Chairman**, Computer Society of India, Cochin Chapter, Kochi, 2017-18
- **Chairman**, Computer Society of India, Cochin Chapter, Kochi, 2018-19

PROGRAMME COMMITTTEES

- **Sessional Chair**, 103rd Indian Science held at University of Mysore, Mysore, 3-7 January, 2016
- **Chair**, International Symposium on Innovations in Natural Computing, INC-2009, CUSAT, Kochi
- **Chair**, National Conference on Indian Language Computing, NCILC-2011, CUSAT, Kochi
- **Chair**, Second National Conference on Indian Language Computing,NCILC-2012, CUSAT, Kochi
- **Programme Committee Member**, International Conference on Data Science and Engineering, ICDSE-2012, CUSAT, Kochi
- **Chair**, Third National Conference on Indian Language Computing,NCILC-2013, CUSAT, Kochi
- **Co-Chair**, International Conference on Data Science and Engineering, ICDSE-2014, CUSAT, Kochi
- **Chair**, Fourth National Conference on Indian Language Computing,NCILC-2014,CUSAT, Kochi
- **Chair**, Fifth National Conference on Indian Language Computing,NCILC-2015,CUSAT, Kochi
- **Chair**, Sixth National Conference on Indian Language Computing,NCILC-2016, CUSAT, Kochi
- **Chair**, International Conference on Data Science and Engineering, ICDSE-2016, CUSAT, Kochi
- **Chair**, Seventh National Conference on Indian Language Computing,NCILC-2017, CUSAT, Kochi
- **Chair**, Eighth National Conference on Indian Language Computing,NCILC-2018, CUSAT, Kochi

ACADEMIC VISITS ABROAD

- **2011** - Visited **Slovenia** as part of the Indo- Slovenian Joint Project for 15 days starting June 10, 2011

INVITED/SPECIAL TALKS

6. **Introduction to Complex Networks**, National Workshop on Complex Networks, Organized by Department of Futures Studies, University Of Kerala, Trivandrum 19-20 January, 2017
5. **Content Based Image Retrieval**, Five day FDP(TEQIP) on Recent Trends in Satellite and Medical Imaging, Organized by College of Engineering, Perumon, July, 2016

4. **Intelligent Systems**, UGC Sponsored Tow day National Seminar on Recent Trends in Computer Science, Organized by MES College, Ponnani, 20-21 January, 2016

3. **Sage Programming**, Five Day Workshop on Graph Theory and Computer Applications, Organized by Department of Computer Applications, CUSAT, 08-12 December, 2014

2. **Content Based Image Retrieval**, National Seminar on Recent Trends in Information Technology, Organized by Sree Ayyappa College, Eramallikkara, 7-8 March, 2014

1. **Intelligent Systems: Past,Present & Future**, National Seminar, Organized by KKTM Government College, Pullut, Thrissur, 24-25 October, 2013

PH.D AWARDED

1. **Julie M David** – PhD "Statistical Machine Learning Techniques for the prediction of Learning Disabilities in School-Age Children" *2013*

2. **Aysha V.** – PhD "Document Image Segmentation and Compression using Artifical Neural Networks and Evolutionary Methods" *2014*

3. **Sindhu M.S.** – PhD "A data Mining Approach for the Identification of Adverse Drug Events (ADE) Resulting from Drug-Drug Interactions (DDI) to Improve Pharmacovigilance" *2014*

4. **Sindhumol S.** – PhD "Improved Feature Extraction and Classification Techniques for Multispectral Brain Magnetic Resonance Images" *2014*

5. **Simily Joseph** – PhD "Classification and Content Based Retrieval of Digital Mammograms and Placental Sonograms" *2014*

6. **Cini Kurian** – PhD "Analysis of Unique Phonemes and Developmen of Automatic Speech Recognizer for Malayalam Language" *2014*

7. **Abraham V.** – PhD "Content based image retrieval of brain MR images and level based anomaly detection" *2014* (Anna University, Chennai)

8. **Ramkumar R.** – PhD "A Study of some Centrality measures in Graphs" *2015*

9. **Bino Sebastian** – PhD "Mathematical Morphology on Hypergraph spaces and its applications in Image Processing" *2016*

PATENTS FILED

- Kumar Moorakkal Bhaskaran Santosh, Balakrishnan Kannan and Neelakantapillai Sunilkumar," Portable Agriculture Network System" 2017

Selected publications in Journals

[1] Sunil Kumar and Kannan Balakrishnan. "Betweenness Centrality in Cartesian Product of Graphs". In: *Electronic Notes in Discrete Mathematics* 63 (2017), pp. 287–294.

[2] Sunil Kumar and Kannan Balakrishnan. "On the number of geodesics of Petersen graph GP (n, 2)". In: *Electronic Notes in Discrete Mathematics* 63 (2017), pp. 295–302.

[3] Bino Sebastian Vadakkenveettil, Avittathur Unnikrishnan, Kannan Balakrishnan, and Ramkumar Padinjare Pisharath Balakrishna. "Morphological filtering on hypergraphs". In: *Discrete Applied Mathematics* 216 (2017), pp. 307–320.

[4] S Reshmi and Kannan Balakrishnan. "Implementation of an inquisitive chatbot for database supported knowledge bases". In: *sādhanā* 41.10 (2016), pp. 1173–1178.

[5] Kannan Balakrishnan, Manoj Changat, Anandavally K Lakshmikuttyamma, Joseph Mathew, Henry Martyn Mulder, Prasanth G Narasimha-Shenoi, and N Narayanan. "Axiomatic characterization of the interval function of a block graph". In: *Discrete Mathematics* 338.6 (2015), pp. 885–894.

[6] Kannan Balakrishnan, Boštjan Brešar, Manoj Changat, Sandi Klavžar, Aleksander Vesel, and Petra Žigert Pleteršek. "Equal opportunity networks, distance-balanced graphs, and Wiener game". In: *Discrete Optimization* 12 (2014), pp. 150–154.

[7] Julie M David and Kannan Balakrishnan. "Learning disability prediction tool using ANN and ANFIS". In: *Soft Computing* 18.6 (2014), pp. 1093–1112.

[8] Abraham Varghese, Kannan Balakrishnan, Reji Rajan Varghese, and Joseph S Paul. "Content-based image retrieval of axial brain slices using a novel lbp with a ternary encoding". In: *The Computer Journal* 57.9 (2014), pp. 1383–1394.

[9] Kurian Cini and Balakrishnan Kannan. "Connected digit speech recognition system for Malayalam language". In: *Sadhana* 38 (2013), pp. 1339–1346.

[10] S Sindhumol, Anil Kumar, and Kannan Balakrishnan. "Automated brain tissue classification by multisignal wavelet decomposition and independent component analysis". In: *ISRN Biomedical Imaging* 2013 (2013), pp. 1–10.

[11] S Sindhumol, Anil Kumar, and Kannan Balakrishnan. "Spectral clustering independent component analysis for tissue classification from brain MRI". In: *Biomedical Signal Processing and Control* 8.6 (2013), pp. 667–674.

[12] Bijo S Anand, Kannan Balakrishnan, Manoj Changat, and Iztok Peterin. "Atoms and clique separators in graph products". In: *Applicable Analysis and Discrete Mathematics* (2012), pp. 46–62.

[13] Kannan Balakrishnan, Manoj Changat, Henry Martyn Mulder, and Ajitha R Subhamathi. "Axiomatic characterization of the antimedian function on paths and hypercubes". In: *Discrete Mathematics, Algorithms and Applications* 4.04 (2012), p. 1250054.

[14] Kannan Balakrishnan, Manoj Changat, Henry Martyn Mulder, and Ajitha R Subhamathi. "Consensus strategies for signed profiles on graphs". In: *Ars Mathematica Contemporanea* 6.1 (2012), pp. 127–145.

[15] Kannan Balakrishnan, Boštjan Brešar, Manoj Changat, Sandi Klavžar, Iztok Peterin, Ajitha R Subhamathi, et al. "Almost self-centered median and chordal graphs". In: *Taiwanese Journal of Mathematics* 16.5 (2012), pp. 1911–1922.

[16] M David Julie and Balakrishnan Kannan. "Attribute reduction and missing value imputing with ANN: prediction of learning disabilities". In: *Neural Computing and Applications* 21.7 (2012), pp. 1757–1763.

[17] R Ram Kumar and B Kannan. "Median sets and median number of a graph". In: *ISRN Discrete Mathematics* 2012 (2012).

[18] Abraham Varghese, Reji Rajan Varghese, Balakrishnan Kannan, and JS Paul. "Identification of Region of Interest using Local Binary Pattern with Ternary Encoding". In: *Digital Image Processing* 3.16 (2011), pp. 1050–1052.

[19] Kannan Balakrishnan, B Brešar, M Kovše, Manoj Changat, Ajitha R Subhamathi, and S Klavžar. "Simultaneous embeddings of graphs as median and antimedian subgraphs". In: *Networks* 56.2 (2010), pp. 90–94.

[20] Kannan Balakrishnan, Boštjan Brešar, Manoj Changat, Sandi Klavžar, Matjaž Kovše, and Ajitha R Subhamathi. "Computing median and antimedian sets in median graphs". In: *Algorithmica* 57.2 (2010), pp. 207–216.

Conference publications

[1] MB Santosh Kumar, VG Renumol, and Kannan Balakrishnan. "Design and Development of a Knowledge-Based System for Diagnosing Diseases in Banana Plants". In: *Advances in Machine Learning and Data Science*. Springer, Singapore, 2018, pp. 239–250.

[2] PJ Jino and Kannan Balakrishnan. "Combined approach for binarization of offline handwritten documents". In: *Electronics and Communication Systems (ICECS), 2017 4th International Conference on*. IEEE. 2017, pp. 23–27.

[3] PJ Jino, Jomy John, and Kannan Balakrishnan. "Offline handwritten Malayalam character recognition using stacked LSTM". In: *Intelligent Computing, Instrumentation and Control Technologies (ICICICT), 2017 International Conference on*. IEEE. 2017, pp. 1587–1590.

[4] Manoj Changat, Kannan Balakrishnan, Ram Kumar, GN Prasanth, and A Sreekumar. "On the Center Sets of Some Graph Classes". In: *Conference on Algorithms and Discrete Applied Mathematics*. Springer, Cham. 2016, pp. 240–253.

[5] KM Harsha, O Facila Chinchu, Cini Kurian, and Kannan Balakrishnan. "A Comparative study of HMM and SVM in Malayalam Digit Recognition". In: *3rd National Conference on Indian Language Computing organised by Dept. of Computer Applications, CUSAT*. 2013.

[6] MS Sheethal, B Kannan, Abraham Varghese, and T Sobha. "Intelligent classification technique of human brain MRI with efficient wavelet based feature extraction using local binary pattern". In: *Control Communication and Computing (ICCC), 2013 International Conference on*. IEEE. 2013, pp. 368–372.

[7] S Sindhumol, Anil Kumar, and Kannan Balakrishnan. "Wavelet based Independent Component Analysis for multispectral brain tissue classification". In: *Communications and Signal Processing (ICCSP), 2013 International Conference on*. IEEE. 2013, pp. 415–418.

[8] Abraham Varghese, Kannan Balakrishnan, Reji R Varghese, and Joseph S Paul. "Content based image retrieval of T2 weighted brain MR images similar to T1 weighted images". In: *International Conference on Pattern Recognition and Machine Intelligence*. Springer, Berlin, Heidelberg. 2013, pp. 474–481.

[9] Abraham Varghese, Reji Rajan Varghese, Kannan Balakrishnan, and Joseph S Paul. "Level identification of brain MR images using histogram of a LBP variant". In: *Computational Intelligence & Computing Research (ICCIC), 2012 IEEE International Conference on*. IEEE. 2012, pp. 1–4.

[10] Jomy John, KV Pramod, and Kannan Balakrishnan. "Offline handwritten Malayalam Character Recognition based on chain code histogram". In: *Emerging Trends in Electrical and Computer Technology (ICETECT), 2011 International Conference on*. IEEE. 2011, pp. 736–741.

[11] John Jomy, KV Pramod, and Balakrishnan Kannan. "Handwritten character recognition of south Indian scripts: a review". In: *National Conference on Indian Language Computing, Kochi, Feb 19-20, 2011*. 2011.

[12] Simily Joseph and Kannan Balakrishnan. "Local binary patterns, haar wavelet features and haralick texture features for mammogram image classification using artificial neural networks". In: *Advances in Computing and Information Technology*. Springer, Berlin, Heidelberg, 2011, pp. 107–114.

[13] Simily Joseph, Jomy John, Kannan Balakrishnan, and Pramod K Vijayaraghavan. "Content based image retrieval system for Malayalam handwritten characters". In: *Electronics Computer Technology (ICECT), 2011 3rd International Conference on*. Vol. 5. IEEE. 2011, pp. 386–390.

[14] G Malu, Kannan Balakrishnan, and Narendra Kuber Bodhey. "Area and Volume Calculation of Necrotic Tissue regions of heart using Interpolation". In: *Emerging Trends in Electrical and Computer Technology (ICETECT), 2011 International Conference on*. IEEE. 2011, pp. 728–730.

[15] K. A. Rafidha Rahiman, K. Balakrishnan, and K. B. Sherly. "Using Neural Network classifier Support Vector Machine Regression for the prediction of Melting Point of Drug - like compounds". In: *2011 International Conference on Emerging Trends in Electrical and Computer Technology*. Mar. 2011, pp. 636–640. DOI: 10.1109/ICETECT.2011.5760195.

[16] V Aysha, Kannan Balakrishnan, and S Babu Sundar. "Parallel genetic algorithm for document image compression optimization". In: *Electronics and Information Engineering (ICEIE), 2010 International Conference On*. Vol. 2. IEEE. 2010, pp. V2–483.

[17] M David Julie and Balakrishnan Kannan. "Prediction of learning disabilities in school age children using decision tree". In: *Recent Trends in Networks and Communications*. Springer, Berlin, Heidelberg, 2010, pp. 533–542.

[18] Cini Kurian, A Firoz Shah, and Kannan Balakrishnan. "Isolated Malayalam digit recogntion using Support Vector Machines". In: *Communication Control and Computing Technologies (ICCCCT), 2010 IEEE International Conference on*. IEEE. 2010, pp. 692–695.

[19] Julie M David and Kannan Balakrishnan. "Paper on prediction of frequent signs of learning disabilities in school age children using association rules". In: *Proceedings of the international conference on advanced computing, ICAC*. Vol. 9. 2009, pp. 202–207.

[20] Cini Kurian and Kannan Balakrishnan. "Speech recognition of Malayalam numbers". In: *Nature & Biologically Inspired Computing, 2009. NaBIC 2009. World Congress on*. IEEE. 2009, pp. 1475–1479.

List of Journal Publications

[1] Sunil Kumar and Kannan Balakrishnan. "Betweenness Centrality in Cartesian Product of Graphs". In: *Electronic Notes in Discrete Mathematics* 63 (2017), pp. 287–294.

[2] Sunil Kumar and Kannan Balakrishnan. "On the number of geodesics of Petersen graph GP (n, 2)". In: *Electronic Notes in Discrete Mathematics* 63 (2017), pp. 295–302.

[3] Bino Sebastian Vadakkenveettil, Avittathur Unnikrishnan, Kannan Balakrishnan, and Ramkumar Padinjare Pisharath Balakrishna. "Morphological filtering on hypergraphs". In: *Discrete Applied Mathematics* 216 (2017), pp. 307–320.

[4] Jomy John, K Balakrishnan, and KV Pramod. "Handwritten Malayalam character recognition with a novel gradient based feature descriptor and a comparative study using SVM and ELM". In: *Int. J. Adv. Eng. Technol. Sci.* 2.3 (2016), pp. 13–20.

[5] S Reshmi and Kannan Balakrishnan. "Implementation of an inquisitive chatbot for database supported knowledge bases". In: *sādhanā* 41.10 (2016), pp. 1173–1178.

[6] Kannan Balakrishnan, Manoj Changat, Anandavally K Lakshmikuttyamma, Joseph Mathew, Henry Martyn Mulder, Prasanth G Narasimha-Shenoi, and N Narayanan. "Axiomatic characterization of the interval function of a block graph". In: *Discrete Mathematics* 338.6 (2015), pp. 885–894.

[7] Julie M David and Kannan Balakrishnan. "Learning disability prediction tool using ANN and ANFIS". In: *Soft Computing* 18.6 (2014), pp. 1093–1112.

[8] Balakrishnan Kannan, Vesel Aleksander, Žigert Pleteršek Petra, Changat Manoj, Brešar Bostjan, and Klavzar Sandi. "Equal opportunity networks, distance-balanced graphs, and Wiener game". In: *Discrete Optimization* 12 (2014), pp. 150–154.

[9] Sunil Kumar Raghavan Unnithan, Balakrishnan Kannan, and Madambi Jathavedan. "Betweenness centrality in Some classes of graphs". In: *International Journal of Combinatorics* 2014 (2014).

[10] Bino Sebastian, A Unnikrishnan, Kannan Balakrishnan, and PB Ramkumar. "Mathematical morphology on hypergraphs using vertex-hyperedge correspondence". In: *ISRN Discrete Mathematics* 2014 (2014).

[11] Abraham Varghese, Kannan Balakrishnan, Reji Rajan Varghese, and Joseph S Paul. "Content-based image retrieval of axial brain slices using a novel lbp with a ternary encoding". In: *The Computer Journal* 57.9 (2014), pp. 1383–1394.

[12] Varghese Abraham, Balakrishnan Kannan, Varghese R Reji, and Paul S Joseph. "Content Based Image Retrieval of Brain MR Images across Different Classes". In: *International Journal of Electrical, Robotics, Electronics and Communications Engineering Vol:7 No:8, 2013* (2013), pp. 482–486.

[13] Kurian Cini and Kannan Balakrishnan. "Connected digit speech recognition system for Malayalam language". In: *Sadhana* 38 (2013), pp. 1339–1346.

[14] Julie M David and Kannan Balakrishnan. "Performance improvement of fuzzy and neuro fuzzy systems: prediction of learning disabilities in school-age children". In: *International Journal of Intelligent Systems and Applications* 5.12 (2013), p. 34.

[15] Jomy John, Kannan Balakrishnan, and KV Pramod. "A System for Offline Recognition of Handwritten Characters in Malayalam Script." In: *International Journal of Image, Graphics & Signal Processing* 5.4 (2013).

[16] Simily Joseph, Kannan Balakrishnan, MB Nair, and Reji Rajan Varghese. "Ultrasound image despeckling using local binary pattern weighted linear filtering". In: *International Journal of Information Technology and Computer Science (IJITCS)* 5.6 (2013), p. 1.

[17] Phil Antony Mingo, KA Rafidha Rehiman, and Kannan Balakrishnan. "An Autonomous Framework for Classifier Selection in Weka". In: *International Journal Of Engineering And Computer Science* 2.3 (2013), pp. 696–703.

[18] MS Sindhu and B Kannan. "Detecting Signals of Drug-Drug Interactions Using Association Rule Mining Methodology". In: *IJCSIT International Journal of Computer Science and Information Technologies* 4.4 (2013), pp. 590–594.

[19] MS Sindhu and B Kannan. "Investigating the factors affecting drug-drug interactions". In: *Int J Pharm Bio Sci* 4.4 (2013), pp. 467–476.

[20] S Sindhumol, Kannan Balakrishnan, and Anil Kumar. "Brain Tissue Classification from Multispectral MRI by Wavelet based Principal Component Analysis." In: *International Journal of Image, Graphics & Signal Processing* 5.8 (2013).

[21] S Sindhumol, Anil Kumar, and Kannan Balakrishnan. "Automated brain tissue classification by multisignal wavelet decomposition and independent component analysis". In: *ISRN Biomedical Imaging* 2013 (2013), pp. 1–10.

[22] S Sindhumol, Anil Kumar, and Kannan Balakrishnan. "Spectral clustering independent component analysis for tissue classification from brain MRI". In: *Biomedical Signal Processing and Control* 8.6 (2013), pp. 667–674.

[23] Bijo S Anand, Kannan Balakrishnan, Manoj Changat, and Iztok Peterin. "Atoms and clique separators in graph products". In: *Applicable Analysis and Discrete Mathematics* (2012), pp. 46–62.

[24] Kannan Balakrishnan, Manoj Changat, Henry Martyn Mulder, and Ajitha R Subhamathi. "Axiomatic characterization of the antimedian function on paths and hypercubes". In: *Discrete Mathematics, Algorithms and Applications* 4.04 (2012), p. 1250054.

[25] Kannan Balakrishnan, Manoj Changat, Henry Martyn Mulder, and Ajitha R Subhamathi. "Consensus strategies for signed profiles on graphs". In: *Ars Mathematica Contemporanea* 6.1 (2012), pp. 127–145.

[26] Kannan Balakrishnan, Boštjan Brešar, Manoj Changat, Sandi Klavžar, Iztok Peterin, Ajitha R Subhamathi, et al. "Almost self-centered median and chordal graphs". In: *Taiwanese Journal of Mathematics* 16.5 (2012), pp. 1911–1922.

[27] Jomy John, KV Pramod, and Kannan Balakrishnan. "Unconstrained handwritten Malayalam character recognition using wavelet transform and support vector machine classifier". In: *Procedia Engineering* 30 (2012), pp. 598–605.

[28] Jomy John, Kannan Balakrishnan, et al. "Malayalam Character Recognition System for Camera Enabled Mobile Devices." In: *International Journal of Advanced Research in Computer Science* 3.6 (2012), pp. 31–38.

[29] Simily Joseph and Kannan Balakrishnan. "Multi Query Image Retrieval System with Application to Mammogram Images." In: *International Journal of Advanced Research in Computer Science* 3.3 (2012), pp. 469–473.

[30] M David Julie and Balakrishnan Kannan. "Attribute reduction and missing value imputing with ANN: prediction of learning disabilities". In: *Neural Computing and Applications* 21.7 (2012), pp. 1757–1763.

[31] R Ram Kumar and B Kannan. "Median sets and median number of a graph". In: *ISRN Discrete Mathematics* 2012 (2012).

[32] V Sebastian, A Unnikrishnan, and Kannan Balakrishnan. "Gray level co-occurrence matrices: generalisation and some new features". In: *International Journal of Computer Science, Engineering and Information Technology (IJCSEIT), Vol.2, No.2, April 2012* (2012).

[33] Abraham Varghese and Balakrishnan Kannan. "Edge Enhancement using Co-Occurrence Features of LBP Coded Low Contrast MR Images". In: *Digital Image Processing* 4.8 (2012), pp. 406–408.

[34] Julie M David and Kannan Balakrishnan. "Prediction of Key Symptoms of LearningDisabilities in School-Age ChildrenUsing Rough Sets". In: *International Journal of Computer and Electrical Engineering* 3.1 (2011), p. 163.

[35] Cini Kurian and Kannan Balakrishnan. "Automated Transcription System for Malayalam Language". In: *International Journal of Computer Applications* 19.5 (2011), pp. 5–10.

[36] Abraham Varghese, Reji Rajan Varghese, Balakrishnan Kannan, and JS Paul. “Identification of Region of Interest using Local Binary Pattern with Ternary Encoding”. In: *Digital Image Processing* 3.16 (2011), pp. 1050–1052.

[37] Kannan Balakrishnan, B Brešar, M Kovše, Manoj Changat, Ajitha R Subhamathi, and S Klavžar. “Simultaneous embeddings of graphs as median and antimedian subgraphs”. In: *Networks* 56.2 (2010), pp. 90–94.

[38] Kannan Balakrishnan, Boštjan Brešar, Manoj Changat, Sandi Klavžar, Matjaž Kovše, and Ajitha R Subhamathi. “Computing median and antimedian sets in median graphs”. In: *Algorithmica* 57.2 (2010), pp. 207–216.

[39] Kannan Balakrishnan, Manoj Changat, and Henry Martyn Mulder. “The plurality strategy on graphs”. In: *Australasian J. Combin* 46 (2010), pp. 191–202.

[40] Kannan Balakrishnan, Boštjan Brešar, Manoj Changat, Wilfried Imrich, Sandi Klavžar, Matjaž Kovše, and Ajitha R Subhamathi. “On the remoteness function in median graphs”. In: *Discrete Applied Mathematics* 157.18 (2009), pp. 3679–3688.

[41] Kannan Balakrishnan, Manoj Changat, Iztok Peterin, Simon Špacapan, Primož Šparl, and Ajitha R Subhamathi. “Strongly distance-balanced graphs and graph products”. In: *European Journal of Combinatorics* 30.5 (2009), pp. 1048–1053.

[42] Kannan Balakrishnan, Manoj Changat, and Sandi Klavžar. “The median function on graphs with bounded profiles”. In: *Discrete Applied Mathematics* 156.15 (2008), pp. 2882–2889.

[43] Kannan Balakrishnan, Manoj Changat, Sandi Klavzar, Joseph Mathews, Iztok Peterin, GN Prasanth, and Simon Spacapan. “Antimedian graphs”. In: *Australasian Journal of Combinatorics* 41 (2008), p. 159.

[44] MI Jinnah and B Kannan. “On semi-idempotents in rings”. In: *Proceedings of the Japan Academy, Series A, Mathematical Sciences* 62.6 (1986), pp. 211–212.