Dr. SUREKHA BORRA, M. Tech, PhD

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RESEARCH & PUBLICATIONS SUMMARY

- **RESEARCH INTERESTS:** Cryptography, Copyright Protection, Digital Image and Video Analytics, Machine Learning, Biometrics, Remote Sensing
- **Google Scholar Citations: 146**
- **h-index: 6**
- **Scopus Indexed Journal Publications: 11**
- **Patents Filed: 1**
- **Edited Books : 1**
- **Guest Editorial for Special Issues: 2**
- **Book Chapters in Edited Books : 4**
- **International Journals : 11**
- **International Conferences : 14**
- **National Conferences: 5**
- **PhD Scholars under Supervision: 4**
- **Funded Projects: 3**

FUNDS AND GRANTS RECEIVED:

- **Funding Agency   : Institution of Engineers (India)**
  Scheme   : IE (I) R&D Grant in aid of Rs 50,000
  Title of Proposal : Automatic Blister Pack Quality Monitoring System for SMPFs
  Budget   : Rs 50,000/-
  Status   : Completed
- **Funding Agency   : Karnataka State Council for Science and Technology (KSCST)**
  Scheme   : Students Project Proposals 39th Series
  Title of Proposal : Automatic Blister Pack Quality Monitoring System for Small and Medium Pharmaceutical Firms
  Budget   : Rs 5,000/-
  Status   : Completed
- **Funding Agency   : Karnataka State Council for Science and Technology (KSCST)**
  Scheme   : Students Project Proposals 40th Series
  Title of Proposal : Design and Implementation of Highly Secure Medical Record Communication Algorithms For Telemedicine Applications
  Budget   : Rs 5,000/-
  Status   : Completed

AWARDS/RECOGNITIONS/ACHIEVEMENTS

- **"Woman Achiever's Award"** from IE (I), Karnataka State Centre on 8th March 2017.

- **"Woman Educator & Scholar Award"** by National Foundation for Entrepreneurship Development (NFED) on 8th March 2017, Coimbatore, India.
- **"Best Young Women Scientist" award (2016)** by Pearl Foundation, Madurai, India on 10th December 2016, for outstanding achievements in Electronics and Communication Engineering.
- **"Young Woman Achiever" award (2016)** by Venus International Foundation, Chennai, India on 5th March 2016, for contribution in Copyright Protection of Images.
- **"Best paper award"** for paper entitled "Automatic tablet pack quality monitoring system for Small scale Pharmaceutical firms" at National Conference, Hosur, Tamilnadu.
- **"Best paper award"** for paper entitled "Smart Attendance Management System" at National conference, Bangalore, Karnataka.
- **Invited** to present research paper entitled "**AADHAR Integrated Biometric Vigilance System**- A digital measure to curb malpractices in entrance tests" in **Young Scientists' Meet, India International Science Festival, IIT Delhi organized by the Department of Science and Technology (DST), Government of India**, 4th-8th December, 2015, Paper ID: Indig298.
- **One of the Topper** in **8 weeks NPTEL MOOC** on "Estimation for wireless communication, MIMO, OFDM, Cellular and sensor Networks", conducted by **IIT Bombay, India, 20th March 2016.**
- **One of the Topper** in **4 weeks NPTEL MOOC** on "Introduction to remote sensing" conducted by **IIT Roorkee, India, 23rd April 2017.**
- Class **Topper** in M. Tech, B. Tech and Diploma.
- Secured **state 168th rank** in Engineering Common Entrance Test.
- Achieved 100% result in VTU UG exams for the subjects Logic Design (2007-08), Image Processing (2007-08, 2016-17), Multimedia Communication (2007-08), Network Security (2013-14), Analog Communication (2014-15, 2016-17), Wireless Communication (2014-15).
- **REVIEWER (JOURNALS)**
  - IEEE Access
  - IET Image Processing
  - Imaging Science Journal-Taylor & Francis
  - Computer Standards & Interfaces (CSI)- Elsevier
  - Information Sciences (INS)- Elsevier
  - Journal of Systems and Software (JSS)- Elsevier
  - Journal of Information Security and Applications (JISA)- Elsevier
  - International Journal of Synthetic Emotions (IJSE) - IGI Global
  - International Journal of Ambient Computing and Intelligence (IJACI) -IGI Global
- **REVIEWER (CONFERENCES)**
  - **7th IEEE International Advance Computing Conference (IACC-2017),** VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad, Telangana, India, 5th-7th January 2017.
  - **IEEE International Conference on Electrical, Electronics, Communication, Computer and Optimization Techniques (ICEECCOT-2016),** GSSS Institute Of Engineering and Technology for Women, Mysore, India, 9th-10th December 2016.
  - Scientific committee member of **The 7th Springer International Conference on Sciences of Electronics, Technologies of Information and Telecommunications (SETIT 2016),** Hammamet - Tunisia, 18th - 20th December 2016.
  - **6th IEEE International Advance Computing Conference (IACC-2016),** S R K R Engineering College, Bhimavaram, Andhra Pradesh, India, 27th -28th Feb 2016.

- **International Conference on Advanced Trends in VLSI and Signal Processing** (ICAVSP-2014), K.S. Institute of Technology, Bangalore, India, 13th -14th August 2014.
- **National Conference on Recent Trends & Applications in Electrical & Electronics Engineering (NCRTAEEE-2017),** K.S. Institute of Technology, Bangalore, India, 10th -12th May 2017.
- **National Conference on Communications, Signal Processing and Networking, (NCCSN 2017),** Bangalore, India, **20th – 21st April 2017**

- **CHAIRED SESSIONS (CONFERENCES/PROJECT EXHIBITIONS):**
  - Judged the "Mega National Level Dr.AIT Techno exhibition", 14th April, 2016, Dr. Ambedkar Institute of Technology, Bangalore.
  - Chaired Signal Processing session at 6th IEEE International Advance Computing Conference (IACC - 2016) held at S R K R Engineering College, Bhimavaram, Andhra Pradesh, India on 27th-28th February 2016.
  - Chaired the Digital Signal Processing session at 3rd National Conference on Advanced Communication, VLSI Design and Signal Processing (NCCVS-15), organized by the Department of Electronics and Communication Engineering, KSSEM, Bangalore, on 29th April 2015.
  - Chaired the Signal Processing session at 2nd National Conference on Advanced Communication, VLSI Design and Signal Processing (NCCVS-14), organized by the Department of Electronics and Communication Engineering, KSSEM, Bangalore, on 15th May 2014.
  - Judged the Project exhibition at K.S. Institute of Technology, organized by the Department of Computer Science Engineering, Bangalore, on 9th May 2015.

RESEARCH PUBLICATIONS (INTERNATIONAL JOURNALS/CONFERENCES/BOOK CHAPTERS/BOOKS):

Patents: 1
Patent invention number: 5747/CHE/2015 [Filed]
Filed on: 26 Oct 2015
Title: Video Input based System for Warning Anomalies and Automating Attendance of Students

Edited Books: 1
1. Nilanjan Dey, Amira. S. Ashour, Surekha Borra, "Classification in BioApps- Automation of Decision Making" LNCVB Series, Springer –In Press [ISBN 978-3-319-65981-7]

Special Issues:
1. Special Issue on "**Content Protection and Management in E-commerce: Approaches to Multimedia Security**" in **Journal of Global Information Management (JGIM), IGI Global, US**, Vol.25, Issue 4, 2017.
2. Special Issue on "**End-user Privacy, Security, and Copyright issues**" in **Informatica**: **An International Journal of Computing and Informatics, Europe,** Vol.41, Issue 1, 2017.

Book Chapters in Edited Books: 4
1. B. Surekha, Nilanjan Dey, Amira. S. Ashour, "Video Text Extraction and Mining", Mining Multimedia Documents, **Chapter 13, pp.173-192, 2017. CRC Press/ Taylor and Francis Group**, [ISBN 9781138031722] Scopus Indexed

2. B Surekha, Kanchan Nazare Jayant, ViswanadhaRaju S, Nilanjan Dey, "Attendance Recording System Using Partial Face Recognition Algorithm", Intelligent techniques in signal processing for multimedia security, **Springer SCI series, Vol. 660, Chapter 13, pp.293-319, 2017,** [EBook ISBN: 978-3-319-44790-2]- Scopus Indexed

3. Lakshmi H R, B Surekha, ViswanadhaRaju S, "Real Time Implementation of Reversible Watermarking", Intelligent techniques in signal processing for multimedia security SCI Series: Vol. 660, 2016, **Springer Studies in Computational Intelligence (SCI) series, Vol. 660, 2017, Chapter 5, pp.113-132.** [EBook ISBN: 978-3-319-44790-2]-Scopus Indexed

4. B. Surekha, S. Viswanadha Raju, Lakshmi HR, "Visual Cryptography based Lossless Watermarking for Sensitive Images", **SEMCCO 2015, Springer series on Lecture Notes in Computer Science (LNCS), Vol. 9873, Chapter 3, pp.29-39, 2016. [** Ebook ISBN 978-3-319-48959-9]-Scopus Indexed

International Journals: 11

1. Rohit Thanki, Surekha Borra, Vedavyas Dwivedi, Komal Borisagar, "A RONI based Visible Watermarking Approach for Medical Image Authentication", **Journal of Medical Systems, Springer, [**In Press- Accepted on 26 Jul 2017] [Scopus Indexed]

2. Rohit Thanki, Surekha Borra, Vedavyas Dwivedi, Komal Borisagar, "A Steganographic Approach for Secure Communication of Medical Images based on DCT-SVD and Compressed Sensing (CS) Theory", **Imaging Science Journal, Taylor & Francis**, [In Press- Accepted on 07 Jul 2017] [Scopus Indexed]

3. Rohit Thanki, Surekha Borra, Vedvyas Dwivedi, Komal Borisagar, "An Efficient Medical Image Watermarking Scheme based on FDCuT – DCT", **Engineering Science and Technology, an International Journal**, **Elsevier**, [In Press- Accepted 19 June 2017, Available online 1 July 2017] [Scopus Indexed]

4. Sivaranjani Reddi, Surekha Borra, Identity-based Signcryption Groupkey Agreement Protocol Using Bilinear Pairing, **Informatica**, Vol 41, Issue 1, pp. 31–37, 2017.[Scopus Indexed]

5. B.Surekha, Dr.G.N.Swamy, "Sensitive Digital Image Watermarking for Copyright Protection", **International Journal of Network Security (IJNS)**, Vol. 15, No. 2, pp. 95-103, March 2013. [Scopus Indexed]

6. B.Surekha, Dr.G.N.Swamy, "Visual Secret Sharing Based Digital Image Watermarking**", International Journal of Computer Science Issues** (IJCSI), Vol. 9, Issue 3, No 2, pp.312-317, May 2012. [Scopus Indexed]

7. B.Surekha, Dr.G.N.Swamy, "A Spatial Domain Public Image Watermarking", **International Journal of Security and Its Applications** (IJSIA), Vol. 5, No. 1, pp.1-11, January, 2011. [Scopus Indexed]

8. B.Surekha, Dr.G.N.Swamy, Dr.K.Srinivasa Rao, "A Multiple Watermarking Technique for Images based on Visual Cryptography", **International Journal of Computer Applications** (IJCA), ISSN 0975-8887, Vol. 1, No 11, pp 78-82, 2010.

9. B.Surekha, Dr.G.N.Swamy, Dr.K.Srinivasa Rao, A.Ravi Kumar, "A Watermarking Technique based on Visual Cryptography", **International Journal of Information Assurance and Security**(JIAS), ISSN 1554-1010, Dynamic Publishers, USA, Vol. 4, Issue 6, pp. 470-473, 2009.

10. Siri.T.Bhat, B. Surekha, Shreesha Raghavan, "Sparsh Glove: A Gesture-Based Hardware Control for a Multipurpose Wheelchair", **International Journal of Computer Sciences and Engineering**, Vol.4, No.3, pp. 87-90, 2016.

11. B.Surekha, Ratish Rao N, "Automatic Tablet Pack Quality Monitoring System for Small Scale Pharmaceutical Firms", **International Journal of Engineering Research & Science**, Vol-2, Issue-3, pp. 73-79, March 2016.

International Conferences: 14

1. B. Surekha, Ritu P Simha, Sri nithya S, Sneha P K, Rabichith, "Array-based Graphical Password

Authentication", International conference on Signal, Image Processing, Communication & Automation (ICSIPCA-2017), JSS Academy of Technical Education, Bengaluru, 6th & 7th July, 2017.

2. Siri.T.Bhat, B. Surekha, "Sparsh Glove: A Gesture-Based Hardware Control for a Multipurpose Wheelchair", International Conference on Computer science & Technology allies in research, (ICCSTAR-16), City Engineering College, Bangalore, 27th -28th April 2016.

3. Nazare Kanchan Jayanth, B. Surekha, "Attendance Management System Using Hybrid Face Recognition Techniques", **IEEE Conference on Advances in Signal Processin**g, MKSSS's Cummins College of Engineering for Women, Pune, 9th- 11th June 2016, pp.412-417.

4. B. Surekha, Lakshmi HR, "Asynchronous Implementation of Reversible Image Watermarking using Mousetrap Pipelining", **6th IEEE International Advance Computing Conference (IACC - 2016)**, S R K R Engineering College, Bhimavaram, Andhra Pradesh, India, 27-28 February 2016, pp. 529-533.

5. B. Surekha, S. Viswanadha Raju, Lakshmi HR, "Visual Cryptography based Lossless Watermarking for Sensitive Images", 6th International Conference on Swarm, Evolutionary and Memetic Computing (SEMCCO 2015), CMR Technical Campus, Hyderabad, 18th -19th December 2015, **Springer, LNCS 9873.**

6. B.Surekha, S. Viswanadha Raju, "AADHAR Integrated Biometric Vigilance System- A digital measure to curb malpractices in entrance tests", **India International Science Festival- Young Scientists' Meet**, **Department of Science and Technology, Government of India** , **IIT Delhi,** 4th-8th December, 2015, pp. Indig298-1-5.

7. B. Surekha, P. Ravi Babu, G.N. Swamy, "Security analysis of a novel copyright protection scheme using visual cryptography, **IEEE International conference on computing and communication technologies**, Osmania University, Hyderabad, Dec. 11-13, 2014, pp.1-5

8. G. N. Swamy, B. Surekha, "Lossless Watermarking Technique for Copyright Protection of High Resolution Images**", IEEE TENSYMP'2014**, Kaula Lumpur, Malaysia, April 14-16, pp. 73-78, 2014.

9. B.Surekha, Dr.G.N.Swamy, "A Semi-blind Image Watermarking based on Discrete Wavelet Transform and Secret Sharing," **IEEE International Conference on Communication, Information and Computing Technolog**y (ICCICT-2012), Sardar Patel Institute of Technology, Mumbai, October 18-19,pp.1-5, 2012.

10. B.Surekha, Dr.G.N.Swamy, Dr. K. Rama Linga Reddy, "A Novel Copyright Protection Scheme based on Visual Secret Sharing," Third **IEEE International Conference on Computing, Communication and Networking Technologies** (ICCCNT'12), SNS College of Engineering, Coimbatore, July 26-28, pp.1-5, 2012.

11. B.Surekha, Dr.G.N.Swamy, "Digital image Ownership Verification based on Spatial Correlation of Colors," **IET Conference on Image Processing (IET IPR-2012**), University of Westminster, London, UK, July 3-4, pp. 1-5, 2012.

12. B.Surekha, Dr G.N.Swamy, "Resolving Rightful Ownership using the Concept of Visual Cryptography", International Conference on Systemics, Cybernetics and Informatics (ICSCI-2009), Pentagram Research Centre(P) Ltd., Hyderabad, January 7 -10, pp.429-431, 2009.

13. B.Surekha, Dr G.N.Swamy, Dr.A.V.N.Tilak, M.Kama Raju, "MATLAB Implementation of AES-128 algorithm for Secure Image Transfer", International Conference on Modeling and Simulation (CIT ICOMS-2007), Coimbatore Institute of Technology, Coimbatore, Aug 27- 28th , 2007.

14. B.Surekha, Aishwarya .N, Vijay Kumar, "Intelligent Street Light system", 4th IRF International Conference, Cochin, 19th April 2015, pp. 82-84.

National Conferences: 5

1. B. Surekha, Vandana. M.V, Vinutha.R, Vidya.H.S, V.S. Harathi, "Device to assist Alzheimer's Patient", National Conference on Recent Trends & Applications In Electrical & Electronics Engineering, K.S. Institute of Technology, Bangalore, 10th-12th May 2017, pp. 103-108, ISBN: 97881-929425-0-6.

2. B.Surekha, Renuka V Thali, "Review of Segmentation Techniques in Microscopic Blood Smear Images", National Conference on Recent trends in Electronics and Communication-2016, Global

Academy of Technology, Bangalore, 5th May 2016.

3. Ratish Rao, B.Surekha, "Automatic Tablet Pack Quality Monitoring System for Small Scale Pharmaceutical firms", National conference on Information, Communication , VLSI and Embedded System, 16-17 March, 2016, Adhiyamaan College of Engineering, Hosur, Tamilnadu. (Received Best paper award)

4. Nazare Kanchan Jayanth, B. Surekha, "Smart Attendance Management System", 4th National Conference on Advanced Communication, VLSI Design and Signal Processing (NCCVS-16), K. S. School of Engineering and Management, Bangalore, 28th April 2016.

5. B. Surekha, "Multifunction Constant Health Monitoring Sweat Band", National Conference on Green Computing Technologies(NCGCT-2015), Dayananda Sagar Academy of Technology and Management, Bengaluru, 7th May, 2015.

PhD SCHOLARS UNDER SUPERVISION: 4

- Lakshmi H R, "Content Protection of Digital Images through Lossless Watermarking", Viswesvaraya Technological University (VTU), Belgaum, Karnataka, India.

- Pragati P, "Automatic Detection and Estimation of Plant Leaf Diseases based on Hybrid Machine Learning Approaches for Precision Agriculture", Viswesvaraya Technological University (VTU), Belgaum, Karnataka, India.

- Renuka V Tali, "Intelligent White Blood Cells Classification in Microscopic Blood Smear Images using Optimum Machine Learning Techniques", Viswesvaraya Technological University (VTU), Belgaum, Karnataka, India.

- Venkata Kranthi B, "Human Tracking and Re-identification for Automation of Video Surveillance Systems", Viswesvaraya Technological University (VTU), Belgaum, Karnataka, India.

PROFESSIONAL SOCIETIES MEMBERSHIP:

- Member of IEEE-92976402
- Life Member of IE (I)-M-152010-5
- Life Member of ISTE-LM60827
- Life Member of IETE-M209768L
- Life Member of CSI- India : I1510365

WORKSHOPS/CONFERENCES ATTENDED:

1. One Day Syllabus Blow up Workshop of Finalization of V to VIII Semester B.E (CBCS) EC/TC Scheme and Syllabus, VTU Regional Office, Bangalore, 6th July 2017,

2. Faculty development program on **Raspberry Pi & its applications in IoT**, KS Institute of Technology, Bangalore, 18th-21st January 2017.

3. National Conference on **SMART SUMMIT-2016**, Pearl - A Foundation For Educational Excellence, Madurai, 10th December 2016.

4. Symposium on **Linear Algebra and its Applications in Computer vision**, held at JSS Academy of Technical Education, Bangalore from 13th-16th July 2016.

5. Faculty development program on **Writing research Proposals, K.S. Institute of Technology, Bangalore,** 1st February 2015.

6. Faculty development program on **Recent Trends in Video Analytics**, MS Ramaih Institute of Technology, Bangalore, 11th-16th, January 2015.

7. Faculty development program on **Antenna Design and Analysis using ESI's CEM Solutions Tool,** T John Institute of Technology, Bangalore, 15th September 2015.

8. Professional development program on **Formulation of Research and Development Initiatives for Scientists and Technologists**, Engineering Staff College of India (ESCI), Hyderabad, 7th-10th September 2015.
9. Workshop on **Antennas and Propagation,** IETE Bangalore centre, Bangalore, 19th April 2015.
10. Workshop on **ARM CORTEX M3,** K.S. Institute of Technology, Bangalore**,** 10th-11th April 2015.
11. Workshop on **Signals &Systems with its applications** held at IETE Bangalore centre, Bangalore on 22nd February, 2015.
12. Workshop on **Digital Image Processing** held at Karnataka Science and Technology Academy (KSTA), Bangalore on 7th and 8th November, 2013.
13. Workshop on **Analog and Digital Design using CADENCE Tools**, Mallareddy College of Engineering and Technology, Hyderabad, AP, 5th-7th July 2012.
14. Workshop on **Writing Effective Conference Papers,** Muffakham Jah College of Engineering and Technology, Hyderabad, AP, 18th - 19th February 2012.
15. Workshop on **VLSI Design Methodologies**, Padmasri Dr. BV Raju Institute of Technology, Narsapur, AP, 6th - 7th March, 2009.
16. International Conference on **Content Based Image Retrieval**, PES Institute of Technology, Bangalore, Karnataka on 16th -18th July, 2008.
17. Workshop on **Latest trends in Video Processing,** New Horizon College of Engineering, Bangalore, Karnataka, 7th - 8th March 2008.
18. Workshop on **VLSI design**, Gudlavalleru College of Engineering, Gudlavalleru, AP, 9th-10th February 2007.
19. Workshop on **DSP Processors**, PVP Siddhartha Institute of Technology, Vijayawada, A.P, 3rd -4th March, 2005.
20. Faculty development program on **MATLAB** software, VR Siddhartha Engineering College, Vijayawada, A.P, 1st-3rd May 2004.

CONFERENCES/ WORKSHOPS/GUEST LECTURES ORGANIZED:

- Organized **Guest Lecture on Field Theory and its Applications to Antennas** at K.S. Institute of Technology, Bangalore, 20th February 2017.
- Organized two days **Workshop on ARM Processors** at K.S. Institute of Technology, Bangalore, 27th-28th August 2016.
- Organized **Guest Lecture on Applications of Image Processing** at K.S. Institute of Technology, Bangalore, 20th August 2016.
- Organized two days IETE W**orkshop on Wireless Embedded System** at K.S. Institute of Technology, Bangalore, 26th-27th February 2016.
- Organized **Faculty Development Program on Writing Research Proposals** at K.S. Institute of Technology, Bangalore, on 1st February 2016.
- Organized **Guest lecture on Wireless Sensor Networks** at K.S. Institute of Technology, Bangalore, 10th March 2015.
- Organized **Inauguration of IETE students Forum (ISF)** at K.S. Institute of Technology, Bangalore, 12th March 2015.
- Organized **Entrepreneurship Development Awareness Program** at K.S. Institute of Technology, Bangalore, 31st October 2014.
- Organized 17th **ISTE State Level Faculty Convention** at K.S. Institute of Technology, Bangalore, on 20th November 2014.

- Organized **Inauguration of KSIT-IEEE-WIE AFFINITY GROUP** at K.S. Institute of Technology, Bangalore, 15th September 2014.
- Coordinated **International Conference on Advanced Trends in VLSI and Signal Processing** (ICAVSP-2014), K.S. Institute of Technology, Bangalore, 13th August 2014.
- Organized a **State Level Technical Contest IDEA-2013** at K.S. Institute of Technology, Bangalore, 5th September 2013.

CONTRIBUTIONS IN AND OUT OF ORGANIZATION:

- R & D Coordinator, Dept. of ECE, K.S. Institute of Technology.
- Test Coordinator, Dept. of ECE, K.S. Institute of Technology.
- IETE Student Branch coordinator, K.S. Institute of Technology, Bangalore.
- Branch Counselor, IEEE-WIE affinity group (2014-15), KSIT, Bangalore.
- Nodal Officer for AICTE- BSNL -EETP (2014, 2015).
- Member of Board of Examiners (Ph. D), Jain University.(2015-16)
- Expert committee member, Nandi Institute of Technology, Bangalore.

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