



ANAND PAUL

PROFESSOR

 <https://sph.lsuhsu.edu/education/academic-programs/biostatistics-bios/faculty/>

 apaul4@lsuhsu.edu
paul.editor@gmail.com

 **+1(504)498-5094**

Summary: *Accomplished and adaptable computer science and engineering professor with expertise in data science tools and AI/ML deployment. Proven track record in teaching and research, delivering engaging course materials. Collaborative and down-to-earth team leader, fostering a cooperative environment. Actively engages with industry experts to stay current in the field. Committed to inspiring and educating the next generation of technology leaders. A trustworthy professional, bridging academia and industry with practical experience. Ready to make a meaningful impact in Data science and AI/ML. Contact me to discuss how I can contribute to your organization or academic institution.*

EB1a Recipient

Education:

- PhD in Electrical Engineering, [National Cheng Kung University, Taiwan], [2004 - 2010]
- BE in Electrical and Electronics Engineering, [Bharathiyar University], [1998 - 2001]
- D.E.E Diploma in Electrical and Electronics Engineering [Government Polytechnic] [1995-1998]

Experience:

Professor, The School of Computer Science and Engineering Department, [Kyungpook National University], [2021 - 2024]

- Teach undergraduate and graduate courses in areas including machine learning, Artificial Intelligence, Data Science and discrete mathematics.
- Develop and deliver engaging and interactive course materials, including lectures, discussion-based learning, and project-based assignments
- Developed Online Lecture for Fundamentals of Data Science Massive Open Online Courses (MOOC).
- Advise and mentor students[UG Students], and serve on thesis committees
 - Undergraduate and Graduate International Students recruitment committee
 - Graduate Students recruitment committee (Korean students)
 - Korean Government Scholarship Program UG students and PG student evaluation committee.
- Guide Master's and PhD students [on their thesis]

- Conduct research in areas including machine learning, data analytics, and artificial intelligence, and publish findings in top-tier journals and conferences.

Associate Professor, The School of Computer Science and Engineering Department,
[Kyungpook National University], [2014/04/01] - [2021/09/30]

- Teach undergraduate and graduate courses in areas including C++ Programming, Artificial Intelligence, Data Science, Linear Algebra, Probability & Statistics and discrete mathematics.
- Develop and deliver engaging and interactive course materials, including lectures, Flipped learning, and project-based assignments
- Developed Online Lecture for Discrete Mathematics Massive Open Online Courses (MOOC).
- Advise and mentor students [UG Students], and serve on thesis committees
 - Undergraduate and Graduate International Students recruitment committee
 - Korean Government Scholarship Program UG students and PG student evaluation committee.
- Guide Master's and PhD students [on their thesis]
- Conduct research in areas including machine learning, data analytics, and artificial intelligence, and publish findings in top-tier journals and conferences.

Assistant Professor, The School of Computer Science and Engineering,
[Kyungpook National University], [2012/03/01] - [2014/03/31]

- Teach undergraduate and graduate courses in areas including Image Processing, Probability & Statistics and discrete mathematics.
- Develop and deliver engaging and interactive course materials, including lectures, Flipped learning, and project-based assignments
- Advise and mentor students [UG Students], and serve on thesis committees
 - MoU visiting Committee to Christ University
 - International student recruitment committee
- Guide Master's and PhD students [on their thesis]
- Conduct research in areas including Big Data Analytics , IoT and publish findings in top-tier journals and conferences.

Assistant Professor, Department of Electronic Engineering,
[Hanyang University], [2010/03/01] - [2012/02/29]

- Teach undergraduate and graduate courses in areas including Probability & Statistics, Engineering Mathematics, Image Processing.

- Advise and mentor students [UG Students], and serve on thesis committees
 - Undergraduate and Graduate International Students recruitment committee
- Conduct research in areas including Embedded computing, Data Analytics and publish findings in top-tier journals and conferences.

Research Scholar, Government College of Technology, Coimbatore [2002-2004]

- Academic Teaching/ Exam invigilation/ Conduct Research

Embedded System Training in PentaSoft, India 2001-2002

- Keil C Software Package

Computer Software and Tools

- Visual Studio *Visual Studio Code
- Jupyter
- Tableau Software
- Orange Data Mining
- R Studio
- MATLAB

Programming Language

- C
- C++
- Java
- Python
- R Programming
- SQL

Teaching Courses

1. Machine Learning
2. Artificial Intelligence
3. Linear Algebra
4. Discrete Mathematics
5. Introduction to Data Science
6. Probability and Statistics
7. C++ programming
8. Advance AI
9. Big Data Analytics

Massive Open Online Course (MOOC)

1. Machine Learning

<https://www.youtube.com/watch?v=LSPG8kdI8mo&list=PLd1DDyoEDVmaDCRoXxkPZ4xt-t8APQCxb>

2. Fundamentals of Data Science

<https://www.youtube.com/playlist?list=PLd1DDyoEDVmbzp3SJxJ3XrHQpvQQVbwQQ>

3. Discrete Mathematics

<http://www.kocw.net/home/cview.do?cid=64a873289820c4cf>

<https://www.youtube.com/playlist?list=PLd1DDyoEDVmarsiulBpu6w7fxGAUXA0Z8>

Awards

- Best Researcher Award in Kyungpook National University (for Top 10% impact factor journal publication) in 2019.
- *Excellent Professional Service Award* in recognition of contribution to 2015 International Conference on Platform Technology and Services (PlatCon'15) 26th January 2015, Jeju, South Korea.
- Received “*Outstanding Post-Graduate International Student Scholarship*” September 2005-August 2008, sponsored by National Cheng Kung University, Tainan, Taiwan.
- Received “*Fellowship for International Students for good performance*” during the period September 2004-January 2006 sponsored by National Cheng Kung University, Taiwan.
- National Cheng Kung University Full Scholarship (Including Tuition Fee, Credit Fee and Dormitory Fee) from September 2004 - July 2009.
- Received Travel grant from “*NCKU Project of Promoting Academic Excellence and Developing World Class Research Centers*”, [D97-1440] for (TENCON 2008).
- Best Student Paper Award in *National Computer Symposium* (NCS 2009), December 2009 in Parallel and Distributed Computing category.

Professional Recognition:

- IEEE Senior Member (Since 2015)
- ACM Member

- AAAI Member
- Top Researcher [Top 2% Scientist] published by Harvard [2021, 2022]
- **MPEG** (Moving Picture Expert Group) Delegate [m2m focus group] 2010-2013.
- Board of Directors for Korea Multimedia Society
- Editor in Chief IGI Global International Journal of Smart Vehicles and Smart Transportation (IJSVST) [2019-2021]
- Associate and Area Editor of IEEE Systems Man and Cybernetics Magazine [Since 2022]
- Editorial Board of IEEE Access [2018 - 2023]
- Editorial Board of IET Wireless Sensor Systems [Since 2020]
- Editorial Board of ICT Express [Since 2022]
- Editorial Board of IET Nanobiotechnology [Since 2022]
- Editorial Board of PeerJ Computer Science [Since 2022]
- Editorial Board of Cyber-Physical Systems (Taylor&Francis)
- Editorial Board of International Journal of Interactive Multimedia and Artificial Intelligence

Program Committee/Track Chair

- PRICAI 2023 (AI IMPACT Track)
<https://www.pricai.org/2023/organization/pc-members>
- ACM SAC 2014-2019 (Smart HCI Track Chair)
- ICOT 2020-2023

Reviewer for Top Conferences

- AAAI / ICML
- ICLR / NeurIPS
- ECML / ECAI

Research/ Academic Consultation:

- KPR Institute of Engineering and Technology [Since 2023]
- Karpagam Academy of Higher Education [Since 2023]
- PentaSoft Training [2002]
- Research Scholar, GCT, Coimbatore [2002-2004]

Guest Editor :

- IEEE Journal on Biomedical Health Informatics Special Issue -
<https://www.embs.org/jbhi/special-issues/distributed-big-data-intelligence-in-instantaneous-e-healthcare-services/>

- IEEE Journal of Computer Science - <https://www.computer.org/digital-library/journals/oj/cfp-data-analytics-intelligent-interaction-production-systems>
- IEEE Open Journal of the Communication Society <https://www.comsoc.org/publications/journals/ieee-ojcoms/cfp/communication-inspired-artificial-intelligence-beyond-5g>
- IEEE System Man and Cybernetics Magazine : SPECIAL ISSUE -The Science of Getting Ahead in New Era of Human 4.0 with Cybernetics: Modern Challenges and Perspectives
- *Journal on Cloud Computing (Springer) Special Issue on Machine learning algorithms for IoT services in big data and cloud computing*
<https://journalofcloudcomputing.springeropen.com/mliot> (2019)
- *Computer Communication (Elsevier) Special Issue on Software-defined disaster area UAV communication networks for extreme surveillance*
<https://www.journals.elsevier.com/computer-communications/call-for-papers/uav-communication-networks> (2019)
- *International Journal of Machine Learning and Cybernetics (Springer) Special Issue on - Machine Learning Approaches and Challenges of Missing Data in the Era of Big Data.* (2017)
- *MDPI Journal of Sensor and actuator network*
http://www.mdpi.com/journal/jsan/special_issues/big_data_analytics (2019)
- *MDPI Electronics Special Issue "Big Data Analytics, Emerging Technologies and Its Applications"* https://www.mdpi.com/journal/electronics/special_issues/49ZADXLAE1 (2023)

Invited & Keynote Address:

1. Invited speaker at The 2019 IEEE International Conference on Orange Technologies Changzhou, China, November 14-17, 2019
2. Invited Speaker Artificial Intelligence and Sustainable Computing for Smart Cities (AIS2C2), December 21-22, 2022 “Recent Trends in Machine Learning”.
3. Keynote Speaker in INTERNATIONAL CONFERENCE ON INNOVATIONS IN ROBOTICS, INTELLIGENT AUTOMATION AND CONTROL (ICIRIAC 2022)
4. Invited Speaker in IEEE 10 International Conference on Orange Technology, November 2022.

5. International Faculty Development Program “ Research Perspective and Future Trends in Artificial Intelligence and Data Science” August 2022. KPR Institute of Engineering and Technology.
6. International Guest Lecture “Artificial Intelligence for Industrial IoT, August 2022.
7. International Webinar Process of innovation development technology readiness level commercializing of lab technologies - Tech transfer. August 25, 2022
8. International Seminar “Exploiting Recommendation Systems Via Matrix Factorization”, August 1st 2022.
9. Special International Lecture “ Transfer Learning Merits and Demerits”, August 2022.
10. Keynote Speaker at 3rd International Conference on Computing, Communication and Cyber-Security (IC4S-2021) , October 30-31

Projects:

1. Team member of National Science Council(NSC) Taiwan Project “*Research and Implementation on Advanced Multimedia Techniques for Human Centric Digital Life*”. [2006 - 2008]
2. Team member for National Science Council project (NSC 93-2215-E-006-09) in which did research on Motion Estimation for H.264/AVC [2004 - 2006]
3. Principal investigator for LG Telecommunication Project “Adaptive Window Size Selection for Video Processing”, [2010 May - 2012 February] Budget 10,000,000
4. Principal investigator for Kyungpook National University Research Fund for the Project “ Parallel Reconfigurable Computing for M2M application” [2012 May - 2013 April]- Budget 10,000,000
5. Principal investigator for URP -CEST titled “M2M based Real Time Human/Vehicle Detection ” research program sponsored by Center for Embedded System Technology, KNU, Korea [2013 May - 2013 October] - Budget : 30,000,000 Won
6. Principal Investigator for Kyungpook National University Research Fund for the project “Graph based M2M for IoT Environment” , April 2013 - March 2014 budget: 6,000,000 Won
7. BK21 Plus project (SW Human Resource Development Program for Supporting Smart Life) funded by the Ministry of Education, School of Computer Science and Engineering, Kyungpook National University, Korea (21A20131600005). September 2013 - Ongoing.
8. The IT R&D Program of MSIP/IITP. [10041145, Self-Organized Software platform (SoSp) for Welfare Devices]. April 2015 - August 2016.

9. Kyungpook National University Bekyoung Research Fund for “Hierarchical Cloud Computing for IoT” December 2015 - November 2016 Principle Investigator [approx..\$10,000]
10. Kyungpook National University Research Fund “Big Data Analytics and IoT Applications” - September 2015 to February 2017. Principle Investigator [Approx. \$10,000]
11. National Research Foundation of (NRF) grant funded by the Korean Government (NRF - 2017R1C1B5017464). March 2017 to February 2020. Principle Investigator, Fund Approx. \$ 90,000.
12. Next-Generation Information Computing Development Program through National Research Foundation of Korea (NRF) grant funded by the Korean Government (MIST)(NRF - 2017M3C4A7066010). October 2017 to May 2018. [Fund Approx. \$ 10,000]
13. Kyungpook National University Research Fund “Big Data Analytics and IoT Applications” - March 2017 to February 2018. Principle Investigator, [Approx. \$20,000].
14. National Research Foundation of (NRF) grant funded by the Korean Government (NRF - 2020R1A2C1012196). March 2020 to February 2024. Principle Investigator, Fund Approx. \$ 100,000 per year
15. International Project, "Specific Object Detection in Under Water Environment using Image (Processing and Deep Reinforcement Learning (DeepRL)- Fishes and Leakages in Pipe Network. [Total Fund for this project is - 129,858 Saudi Riyal]
16. BK21 FOUR project (AI-driven Convergence Software Education Research Program) funded by the Ministry of Education, School of Computer Science and Engineering, Kyungpook National University, Korea (4199990214394) - Approx - \$ 100,0000 per year to CCMP lab from 2020-2027

Publications:

1. R Jeyaraj, T Balasubramaniam, A Balasubramaniam, A Paul, "DeepWalk with Reinforcement Learning (DWRL) for node embedding", Expert Systems with Applications 243, 122819, June 2024
2. KRS Preethaa, G Wadhwa, Y Natarajan, A Paul, " Feature Selection Graph Neural Network for Optimized Node Categorization", IEEE Transactions on Consumer Electronics December 2023.

3. Ganesh Kumar P, Arul Antran Vijay S, Jothi Prakash V, Anand Paul & Anand Nayyar, "A context-sensitive multi-tier deep learning framework for multimodal sentiment analysis", *Multimedia Tools and Applications*, December 2023.
4. GK Pugalendhi, S Kumaresan, A Paul, " FMC2 model based perception grading for dark insurgent network analysis", *PeerJ Computer Science* 9, e1644, December 2023.
5. A Rehman, D Kim, A Paul, " Convolutional Neural Network Model for Fire Detection in Real-Time Environment", *Computers, Materials & Continua* 77 (2)., November 2023
6. A Paul, N Chilamkurti, A Ahmad, SH Ahmed, Guest Editorial Distributed Big Data Intelligence in Instantaneous E-Healthcare Services", *IEEE Journal of Biomedical and Health Informatics* 27 (10), 4636-4638, October 2023.
7. M Lolaev, SM Naik, A Paul, A Chehri, "Heuristic Weight Initialization for Diagnosing Heart Diseases Using Feature Ranking", *Technologies* 11 (5), 138, October 2023.
8. SM Naik, C Subramani, RPK Jagannath, A Paul, "Exponential filtering technique for Euclidean norm-regularized extreme learning machines", *Pattern Analysis and Applications*, **26**, 1453–1462 (2023)
9. G Singh, R Jeyaraj, A Sharma, A Paul, "A Novel Data Management Scheme in Cloud for Micromachines", *Electronics* 12 (18), 3807, September 2023.
10. Y Natarajan, G Wadhwa, KR Sri Preethaa, Anand Paul "Forecasting Carbon Dioxide Emissions of Light-Duty Vehicles with Different Machine Learning Algorithms", *Electronics* 12 (10), 2288, May 2023.
11. S Divya, S Panda, S Hajra, R Jeyaraj, **A Paul**, SH Park, HJ Kim, TH Oh, "Smart Data Processing for Energy Harvesting Systems using Artificial Intelligence", **Nano Energy**, 108084, February 2023 [*I.F* 19.069 , top 3% in *Multidisciplinary and Applied Physics*].
12. R Jeyaraj, A Balasubramaniam, AK MA, N Guizani, **A Paul** "Resource Management in Cloud and Cloud-Influenced Technologies for Internet of Things Applications", ***ACM Computing Surveys, Volume 55, Issue 12***. March 2023. [*I.F* 14.324 , Top 2% in *Computer Science, Theory & Methods Category*]

13. Y Natarajan, G Wadhwa, KR Sri Preethaa, A Paul, "Forecasting Carbon Dioxide Emissions of Light-Duty Vehicles with Different Machine Learning Algorithms", *Electronics* 12 (10), 2288, May 2023
14. G Pugalendhi, MM Rathore, D Shukla, A Paul, "Handling Big Microarray Data: A Novel Approach to Design Accurate Fuzzy-Based Medical Expert System", *IEEE Access* 11, 35182-35196, March 2023
15. AC Malik Urfa Gul, Anand Paul, Manimurugan S, "Hydrotropism: Understanding the Impact of Water on Plant Movement and Adaptation", *Water* 15 (3), 567, February 2023
16. AP Nithin Kumar Goona, Shraddh, M.Naik, Saidi Reddy Parne, Anand Paul, "DssPyLib: An open-source python FEM software to solve Poisson equation in 2-D using distributed source scheme", *SoftwareX* 21, February 2023
17. ADJ William, S Rajendran, P Pranam, Y Berry, A Sreedharan, J Gul, A Paul, "Blockchain Technologies: Smart Contracts for Consumer Electronics Data Sharing and Secure Payment", *MDPI Electronics*, December 2022.
18. BA ugli Olimov, KC Veluvolu, A Paul, J Kim, UzADL: Anomaly detection and localization using graph Laplacian matrix-based unsupervised learning method", *Computers & Industrial Engineering* 171, 108313, September 2022.
19. B Subramanian, A Paul, J Kim, KWA Chee, "Metrics Space and Norm: Taxonomy to Distance Metrics", *Scientific Programming* 2022.
20. U Malik Gul, A Paul, KWA Chee, "Mathematical Modeling of Real-Time Systems Using Heun and Piecewise Methods", *Mathematical Problems in Engineering* , August 2022.
21. B Subramanian, J Kim, M Maray, A Paul, "Digital Twin Model: A Real-Time Emotion Recognition System for Personalized Healthcare", *IEEE Access*, 2022
22. T Singh, A Solanki, SK Sharma, A Nayyar, A Paul, "A Decade Review on Smart Cities: Paradigms, Challenges and Opportunities", *IEEE Access*", June 2022
23. HA Shah, F Saeed, S Yun, JH Park, A Paul, JM Kang, "A Robust Approach for Brain Tumor Detection in Magnetic Resonance Images Using Finetuned EfficientNet", *IEEE Access* 10, 65426-65438", June 2022.

24. N Rahmatov, F Saeed, **A Paul**, "Analysis of the vulnerability estimation and neighbor value prediction in autonomous systems", *Scientific Reports* 12 (1), 1-15, June 2022
25. R Jeyaraj, **A Paul**, "A Constrained 2D Bin Packing Model for MapReduce Task Scheduling", IEEE Access, May 2022.
26. A Ganesan, **A Paul**, HC Seo, "Elderly People Activity Recognition in Smart Grid Monitoring Environment", *Mathematical Problems in Engineering*, March 2022
27. F Saeed, **A Paul**, H Seo, "A Hybrid Channel-Communication-Enabled CNN-LSTM Model for Electricity Load Forecasting", *Energies* 15 (6), 2263, March 2022.
28. A Balasubramaniam, T Balasubramaniam, **A Paul**, HC Seo, "Electric Vehicle Usage Pattern Analysis Using Nonnegative Matrix Factorization in Renewable EV-Smart Charging Grid Environment", *Mathematical Problems in Engineering*, March 2022.
29. Anusha Ganesan, **Anand Paul**, Ganesan Nagabushnam, and Malik Junaid Jami Gul, "Human-in-the-Loop Predictive Analytics Using Statistical Learning", *Journal of Healthcare Engineering*, July 2021.
30. Sana Shokat, Rabia Riaz, Sanam Shahla Rizvi, Inayat Khan, and **Anand Paul**, "Detection of Touchscreen-Based Urdu Braille Characters Using Machine Learning Techniques", *Mobile Information Systems*, December 2021.
31. Faisal Saeed, Muhammad JamalAhmed, Malik JunaidGul, Kim Jeong Hong, **Anand Paul**,* Muthu Subash Kavitha "A robust approach for industrial small-object detection using an improved faster regional convolutional neural network", *Scientific Report* December 2021.
32. Bekhzod Olimov, Sanjar Karshiev, Eungyeong Jang, Sadia Din, **Anand Paul**, Jeonghong Kim, "Weight initialization based-rectified linear unit activation function to improve the performance of a convolutional neural network model", *Concurrency and Computation: Practice and Experience*, Vol. 33, Issue 22, November 2021.

33. Xingwang Li, Mengyan Huang, Yuanwei Liu, Varun G Menon, *Anand Paul*, Zhiguo Ding , "I/Q Imbalance Aware Nonlinear Wireless-Powered Relaying of B5G Networks: Security and Reliability Analysis", *IEEE Transactions on Network Science and Engineering*, Vol. 8, Issue 4, October 2021.
34. Muhammad Jamal Ahmed , Faisal Saeed , *Anand Paul* , Sadeeq Jan and Hyuncheol Seo , "A new affinity matrix weighted k-nearest neighbors graph to improve spectral clustering accuracy", *PeerJ Computer Science*, September 2021
35. Gurwinder Singh, Anil Sharma, Rathinaraja Jeyaraj, *Anand Paul*, "Handling Non-Local Executions to Improve MapReduce Performance Using Ant Colony Optimization", *IEEE Access*, September 2021
36. Nematullo Rahmatov, *Anand Paul*, Faisal Saeed, Hyuncheol Seo , "Realtime fire detection using CNN and search space navigation", *Real Time Image Processing*, August 2021
37. M. MazharRathor, *Anand Paul*, Seungmin Rho, MuradK han S.Vimal, Syed Attique Shah "Smart Traffic Control: Identifying Driving-Violations using Fog Devices with Vehicular Cameras in Smart Cities" *Sustainable Cities and Society* Volume 71, August 2021.
38. Muhammad Mazhar Rathore, Syed Attique Shah, Ahmed Awad ,Dhirendra Shukla, Shanmuganathan Vimal and *Anand Paul* , "A Cyber-Physical System and Graph-Based Approach for Transportation Management in Smart Cities", *MDPI Sustainability*, July 2021
39. Faisal Saeed, Anand Paul, Muhammad Jamal Ahmed, Malik Junaid Jami Gul, Won-Hwa Hong, Hyuncheol Seo , "Intelligent implementation of residential demand response using multiagent system and deep neural networks" *Concurrency and Computation: Practice and Experience*, March 2021

40. Muhammad Mazhar Ullah Rathore, Malik Junaid Jami Gul, Anand Paul, Ashraf Ali Khan, Raja Wasim Ahmad, Joel Rodrigues, Spiros Bakiras, "Multilevel graph-based decision making in big scholarly data: An approach to identify expert reviewer, finding quality impact factor, ranking journals and researchers", **IEEE Transaction on Emerging Topics in Computing**, March 2021
41. Bekhzod Olimov, Jeonghong Kim, Anand Paul, "REF-Net: Robust, Efficient, and Fast Network for Semantic Segmentation Applications Using Devices With Limited Computational Resources", **IEEE Access**, January 2021.
42. M Junaid Gul, Barathi Subramanian, Anand Paul, Jeonghong Kim, "Blockchain for public health care in smart society", *Microprocessor and Microcontroller*, February 2021.
43. Bekhzod Olimov, Sanjar Karshiev, Eungyeong Jang, Sadia Din, Anand Paul, Jeonghong Kim, "Weight initialization based-rectified linear unit activation function to improve the performance of a convolutional neural network model", **Concurrency and Computation Practice and Experience**, December 2020.
44. Bekhzod Olimov, Jeonghong Kim, Anand Paul, "DCBT-Net: Training Deep Convolutional Neural Networks With Extremely Noisy Labels" **IEEE Access**, December 2020.
45. Raheela Nasim, Halim Ullah, Sanam Shahla Rizvi, Almas Abbasi, Sajid Khan, Rabia Riaz, Anand Paul, "A Cloud-Based Enterprise Resource Planning Architecture for Women's Education in Remote Areas", **MDPI Electronics**, November 2020.
46. Abdul Rehman, Anand Paul, Awais Ahmad, "A Query based Information search in an Individual's Small World of Social Internet of Things", **Computer Communication**, November 2020.
47. M Junaid Gul, Abdul Rehman, Anand Paul, Seungmin Rho, Rabia Riaz, Jeonghong Kim, "Blockchain expansion to secure assets with fog node on special duty", **Soft Computing**, Vol. 24, Issue 20, October 2020.

48. Xingwang Li, Mengyan Huang, Yuanwei Liu, Varun G Menon, Anand Paul, Zhiguo Ding, "I/Q Imbalance Aware Nonlinear Wireless-Powered Relaying of B5G Networks: Security and Reliability Analysis", **IEEE Transaction on Network Science and Engineering**, June 2020.
49. Sadia Din, Anand Paul, Awais Ahmad, "Smart embedded system based on demosaicking for enhancement of surveillance systems", **Computer and Electrical Engineering**, September 2020.
50. Anandkumar Balasubramaniam, Malik Junaid Jami Gul, Varun G Menon, Anand Paul, "Blockchain For Intelligent Transport System" **IETE Technical Review**, March 2020.
51. Ateeq Ur Rehman, Rizwan Ali Naqvi, Abdul Rehman, Anand Paul, Muhammad Tariq Sadiq, Dildar Hussain, "A trustworthy snot aware mechanism as an enabler for citizen services in smart cities", **MDPI Electronics**, Vol 9. Issue 6, June 2020.
52. Faisal Saeed, Anand Paul, P Karthigaikumar, Anand Nayyar, "Convolutional neural network based early fire detection", **Multimedia Tools and Applications**, Vol. 79, April 2020.
53. Faisal Saeed, Anand Paul, Won Hwa Hong, Hyuncheol Seo, "Machine learning based approach for multimedia surveillance during fire emergencies" Vol. 79, **Multimedia Tools and Application**, June 2020.
54. Abdul Rehman, Anand Paul, Awais Ahmad, Gwanggil Jeon, "A novel class based searching algorithm in small world internet of drone network" **Computer Communication**, Vol. 157, May 2020.
55. Rathinaraja Jeyaraj, Ananthanarayana VS, Anand Paul, "Improving MapReduce scheduler for heterogeneous workloads in a heterogeneous environment" **Concurrency and Computation Practice and Experience**, Vol. 32, Issue 7, April 2020.
56. Karshiev Sanjar, Olimov Bekhzod, Jaesoo Kim, Anand Paul, Jeonghong Kim, "Missing Data Imputation for Geolocation-based Price Prediction Using KNN-MCF

Method " MDPI **ISPRS International Journal of Geo-Information**, Vol. 9, Issue 4, April 2020.

57. Nazish Khan, Imran Ahmed, Mahreen Kiran, Hamoodur Rehman, Sadia Din, Anand Paul, Alavalapati Goutham Reddy , "Automatic segmentation of liver & lesion detection using H-minima transform and connecting component labeling" **Multimedia Tools and Application**, Vol 79, Issue 13, April 2020.
58. Mahreen Kiran, Imran Ahmed, Nazish Khan, Hamood ur Rehman, Sadia Din, Anand Paul, Alavalapati Goutham Reddy, "Comparative analysis of segmentation techniques based on chest X-ray images" **Multimedia Tools and Application**, Vol. 79, Issue 13, April 2020.
59. Shipeng Fu, Lu Lu, Hu Li, Zhen Li, Wei Wu, Anand Paul, Gwanggil Jeon, Xiaomin Yang, "A real-time super-resolution method based on convolutional neural networks" **Circuits, Systems and Signal Processing**, Vol. 39, Issue 2, February 2020.
60. Ateeq Ur Rehman, Aimin Jiang, Abdul Rehman, Anand Paul, Muhammad Tariq Sadiq, "Identification and role of opinion leaders in information diffusion for online discussion network", **Journal of Ambient Intelligence and Humanized Computing**, January 2020.
61. Karshiev Sanjar, Olimov Bekhzod, Jaeil Kim, Jaesoo Kim, Anand Paul, Jeonghong Kim, "Improved U-Net: Fully Convolutional Network Model for Skin-Lesion Segmentation" **MDPI Applied Sciences** Vol 10, Issue 10, January 2020.
62. Rizwan Ali Naqvi, Muhammad Arsalan, Abdul Rehman, Ateeq Ur Rehman, Woong- Kee Loh, Anand Paul, "Deep learning-based drivers emotion classification system in time series data for remote applications" **Remote Sensing** Vol. 12, Issue 3, January 2020.
63. Awais Ahmad, Sadia Din, Anand Paul, Gwanggil Jeon, Moayad Aloqaily, Mudassar Ahmad, "Real-time route planning and data dissemination for urban scenarios using the internet of things", **IEEE Wireless Communication** Vol. 26, Issue 6, December

2019.

64. J Rathinaraja, VS Ananthanarayana, Anand Paul, "Dynamic ranking-based MapReduce job scheduler to exploit heterogeneous performance in a virtualized environment", **Journal of Supercomputing**, Vol. 75, Issue 11, November 2019.
65. Nematullo Rahmatov, Anand Paul, Faisal Saeed, Won-Hwa Hong, HyunCheol Seo, Jeonghong Kim, "Machine learning-based automated image processing for quality management in industrial Internet of Things" **International Journal of Distributed Sensor Networks**, Vol. 15, Issue 10, October 2019.
66. Shahzad Yousaf, Imran Shafi, Sadia Din, Anand Paul, Jamil Ahmad, "A big data analytical framework for analyzing solar energy receptors using evolutionary computing approach", **Journal of Ambient Intelligence and Humanized Computing**, Vol. 10, Issue 10, October 2019.
67. Sanghoon Jeon, Taejoon Park, Anand Paul, Yang-Soo Lee, Sang Hyuk Son, "A wearable sleep position tracking system based on dynamic state transition framework" **IEEE Access**, Vol. 7, September 2019.
68. Fadi Al-Turjman, Chadi Altrjman, Sadia Din, Anand Paul, "Energy monitoring in IoT-based ad hoc networks: An overview", **Computer & Electrical Engineering**, Vol.76, pp.133-142, June 2019.
69. Awais Ahmad, Muhammad Babar, Sadia Din, Shehzad Khalid, Muhammad Mazhar Ullah, Anand Paul, Alavalapati Goutham Reddy, Nasro Min-Allah, "Socio-cyber network: The potential of cyber-physical system to define human behaviors using big data analytics, **Future Generation Computer Systems.**, Vol.92, Pages 868-878, March 2019
70. Sadia Din, Anand Paul, Abdul Rehman, "5G-enabled Hierarchical architecture for software-defined intelligent transportation system", **Computer Networks**, Vol.150, pp. 81-89, Feb 2019.
71. Anand Paul, Rathinaraja Jeyaraj, "Internet of Things: A primer", **Human Behavior and Emerging Technologies**, Vol.1, Issue 1, pp. 37-47, January 2019.

72. Atif Khan, Naomie Salim, Haleem Farman, Murad Khan, Bilal Jan, Awais Ahmad, Imran Ahmed, Anand Paul, "Abstractive text summarization based on improved semantic graph approach", *International Journal of Parallel Programming*, Vol.46, Issue 5, pp. 992-1016, October 2018.
73. V Mohanraj, R Sakthivel, A Paul, S Rho, "High Performance GCM Architecture for the Security of High Speed Network", *International Journal of Parallel Programming* 46 (5), 904-922, October 2018.
74. A Rehman, MM Rathore, A Paul, F Saeed, RW Ahmad, "Vehicular traffic optimisation and even distribution using ant colony in smart city environment", *IET Intelligent Transport Systems* 12 (7), 594-601, 2018.
75. Rehman Abdul, Anand Paul, M Junaid Gul, Won-Hwa Hong, Hyuncheol Seo, "Exploiting Small World Problems in a SLoT Environment", *Energies* (MDPI), Vol.11, Issue 8, pages 1-18, August 2018.
76. Sadia Din, Awais Ahmad, Anand Paul, Seungmin Rho, "MGR: Multi-parameter Green Reliable communication for Internet of Things in 5G network", *Journal of Parallel and Distributed Computing* Vol. 118, Pages 34-45, August 2018
77. M Mazhar Rathore, Anand Paul, Awais Ahmad, Naveen Chilamkurti, Won-Hwa Hong, HyunCheol Seo, "Real-time secure communication for Smart City in high-speed Big Data environment", *Future Generation Computer Systems*, Vol. 83, Pages 638-652, June 2018
78. M Mazhar Rathore, Anand Paul, Won-Hwa Hong, HyunCheol Seo, Imtiaz Awan, Sharjil Saeed, "Exploiting IoT and big data analytics: Defining Smart Digital City using real-time urban data" *Sustainable cities and society*, Vol. 40, Pages 600-610, July 2018
79. Mazhar Rathore, Hojae S., Awais Ahmad, [Anand Paul](#) and Gwanggil Jeon, "Real-Time Big Data Stream Processing Using GPU with Spark Over Hadoop Ecosystem", *International Journal of Parallel Programming* , Vol. 46, Issue 3, pages 630-646, June 2018 (Published Online since June 2017).

80. Awais Ahmad, [Anand Paul](#), Sadia Din, Mazhar Rathore, Gyu Sang Choi, Gwanggil Jeon, "Multilevel Data Processing Using Parallel Algorithm for Analyzing Big Data in High-Performance Computing", *International Journal on Parallel Programming*, Vol.46, Issue 3, pages 508-527, June 2018 (Published Online Since March 2017)
81. Awais Ahmad, Murad Khan, [Anand Paul](#), Sadia Din, Mazhar Rathore, Gwanggil Jeon, Gyu Sang Choi, "Toward Modeling and Optimization of features Selection in Big Data based Social Internet of Things", *Future Generation Computer Systems.*, Vol.82, Pages 715-726, May 2018 (Online Since September 2017)
82. M. Mazhar Rathore, Awais Ahmad, [Anand Paul](#) and Seungmin Rho, "Exploiting encrypted and tunneled multimedia calls in high-speed big data environment", *Multimedia Tools and Applications*, Vol.77, Issue 4, pages 4959-4984, February 2018[Published online 24th January 2017]
83. C. Venkatesan, P. Karthigaikumar, [Anand Paul](#), S. Satheeskumaran, R.Kumar, "ECG Signal Processing and SVM Classifier Based Abnormality Detection In Remote Healthcare Application", *IEEE Access*, Vol. 6, March 2018 (published online since 23rd of January 2018)
84. Deblina Bhattacharjee , [Anand Paul](#) , JeongHong Kim , P. Karthigaikumar, "An immersive learning model using evolutionary learning", *Computer and Electrical Engineering* (Elsevier)Vol.65, January 2018, pages. 236-249.
85. Sadia Din, [Anand Paul](#), Awais Ahmad, B. Gupta, Seungmin Rho, "Service Orchestration of Optimization Continuous Feature in Industrial Surveillance using Big Data based Fog-Enabled Internet of Things", *IEEE Access* Vol. 6, February 2018.
86. Mazhar Rathore, Awais Ahmad, [Anand Paul](#), Won-Hwa Hong, HyunCheol Seo, "Advanced Computing Model for Geosocial Media using Big Data Analytics", *Multimedia Tools and Applications*, Vol.76, December 2017, pp. 24767-24787.
87. Mazhar Rathore, [Anand Paul](#), Awais Ahmad, Marco Anisetti, Gwanggil Jeon, "Hadoop-based Intelligent Care System(HICS): Analytical Approach for Big Data in IoT", *ACM Transaction on Internet Technology*, Article 8, Vol.18, Issue 1,

November 2017.

88. Mazhar Rathore, [Anand Paul](#), Seungmin Rho, Awais Ahmad, "Smart Transportation Decision Making through Big Graphs and IoT", *International Journal of Design, Analysis & Tools for Integrated Circuits & Systems*, Oct 2017, Vol. 6 Issue 1, p12-19. 8p. (Not an SCIE paper)
89. Alfred Daniel, Karthik Subburathinam, [Anand Paul](#), Newlin Rajkumar, "Big Autonomous Vehicular Data Classifications: Towards Procuring Intelligence in ITS", *Vehicular Communications* Vol. 9, July 2017 pages 306-312. (online March 2017)
90. Jiao Shi, Yu Lei, Jiaji Wu, [Anand Paul](#), Muccheol Kim, and Gwanggil Jeon, "Uncertain Clustering Algorithm Based on Rough and Fuzzy Sets for Real-Time Image Segmentation", *Journal of Real Time Image Processing* (Springer) Vol. 13, Issue 3, September 2017. Pages 654-663. (first online April 2016)
91. Anfeng Liu, Xiao Liu, Tianyi Wei, Laurence T. Yang, Seungmin Rho, and Anand Paul, "Distributed Multi-representative Re-Fusion Approach for Heterogeneous Sensing Data Collection" *ACM Transaction on Embedded Computing Systems*, Vol. 16, Issue 3, July 2017.
92. Awais Ahmad, Anand Paul, Muard Khan, Sohail Jabbar, Muhammad Mazhar Ullah Rathore, Naveen Chilamkurti, Nasro Min-Allah, "Energy Efficient Hierarchical Resource Management for Mobile Cloud Computing", *IEEE Sustainable Computing*, Vol. 2, Issue 2, April-June 2017.
93. Anandkumar Balasubramaniam, [Anand Paul](#), Won-Hwa Hong, Hyuncheol Seo, Jeong Hong Kim, "Comparative Analysis of Intelligent Transportation Systems for Sustainable Environment in Smart Cities", *Sustainability* Vol. 9, Issue 7, July 2017, page 1120.
94. [Anand Paul](#), Alfred Daniel, Awais Ahmad, and Seungmin Rho, "Cooperative Cognitive Intelligence for Internet of Vehicles", *IEEE System Journal*, Vol. 11 Issue 3, pages 1249-1258, September 2017. (April 8th 2015 published online)
95. Seokhoon Kang, [Anand Paul](#), Gwanggil Jeon, "Reduction of Mixed Noise from

Wearable Sensors in Human-Motion Estimation”, *Computer & Electrical Engineering* Vol. 61, July 2017, page 287-296.

96. Sadia Din, Awais Ahmad, *Anand Paul*, Mazhar Rathore, Gwanggil Jeon, “A Cluster-Based Data Fusion Technique to Analyze Big Data in Wireless Multi-Sensor”, *IEEE Access* Vol. 5 2017 pages 5069-5083.
97. Yang-Yen OU, Ta-Wen Kuan, Anand Paul, Jhing-Fa Wang, An-Chao Tsai, “Spoken Dialog Summarization System with Happiness/Suffering factor recognition”, *Frontier of Computer Science*, Vol.11, Issue 3 pages 429-443, June 2017.
98. GaneshKumar Pugalendhi, Durgadevi Velusamy, *Anand Paul*, Kim Ku-Jin “Fuzzy-based Trusted Routing to Mitigate Packet Dropping attack data Aggregation Points in Smart Grid Communication Network”, *Computing*(Springer), January 2017, Vol.99, Issue 1, pp 81-106.
99. Iljung Yoon, Anand Paul and Jooheung Lee, “Medical Development Platform Using ZyCAP-based Partial Reconfiguration on Zynq SoC”, *Intelligent Automation and Soft Computing* (Taylor and Francis), Vol 23, Issue 2, May 2017 [October 7th online first]
100. Bharathiraja Nallathambi, P Karthigaikumar and Anand Paul, “High Performance Multi-Operand Adder for Medical Images”, *Intelligent Automation and Soft Computing* (Taylor and Francis), Vol..23, Issue 2, May 2017. [Published online since 2016 October 7th]
101. M Mazhar Rathore, Anand Paul, Awais Ahmad, Gwanggil Jeon, "IoT-Based Big Data: From Smart City towards Next Generation Super City Planning", *International Journal on Semantic Web and Information Systems (IJSWIS)*, Vol.11, Issue 1, Pages 28-27, Jan-Feb 2017
102. Deblina Bhattacharjee, Anand Paul, Jeong Hong Kim and Muccheol Kim, “An Object Localization Optimization Technique in Medical Image using Plant Growth Simulation Algorithm”, *Springer Plus*, Vol.5, page 1784, 2016.
103. Anand Paul, Awais Ahmad, Mazhar Rathore, and Sohail Jabbar, “Smart buddy: Defining Human Behavior Using Big Data Analytics in Social Internet of Things”, *IEEE*

Wireless Communication Magazine, October 2016

104. Mazhar Rathore, Awais Ahmad, Anand Paul, Jiafu Wan, Daqiang Zhang, “Real-Time Medical Emergency Response System: Exploiting IoT and Big Data for Public Health”, *Journal of Medical Systems*, Vol.40, Issue 12 December 2016. [online since 28th of October 2016]
105. Mazhar Rathore, Awais Ahmad, Anand Paul, and Seungmin Rho, “Urban Planning and Building Smart Cities based on the Internet of Things using Big Data analytics”, **Computer Networks (Elsevier)** Vol. 101, 4th June 2016, Pages 63-60. [First online January 11th 2016].
106. Awais Ahmad, Anand Paul, Mazhar Rathore and Hangbae Chang, “An Efficient Multidimensional Big Data Approach in Machine-to-Machine Communication”, **ACM Transaction on Embedded Computing Systems** Vol.15, Issue 2, May 2016.
107. Mazhar Rathore, Anand Paul, Awais Ahmad, “Real Time Intrusion Detection System for Ultra-High Speed Big Data Environment”, *Journal of Supercomputing*, September 2016, Volume 72, Issue 9, pages 3489-3510. <First online since 23rd February 2016>
108. Anand Paul, and Seungmin Rho, "Probabilistic Model for M2M in IoT Networking and Communication", *Telecommunication Systems* (Springer), Vol.62, Issue 1, May 2016 (First online March 17th 2015)
109. Awais Ahmad, Mazhar Rathore, Anand Paul, Won-Hwa Hong and Hyun Cheol Seo, “Context Aware Mobile Sensors for Sensing Discrete Events in Smart Environment”, *Journal of Sensor* (Hindawi) <April 2016 online first>
110. Alfred Daniel, Anand Paul, Awais Ahmad and Seungmin Rho, “Cooperative Intelligence of Vehicles for Intelligent Transportation Systems (ITS)”, *Wireless Personal Communications* (Springer) , Vol.87. Issue 2, pp 461-484, March 2016.
111. Mazhar Rathore, Awais Ahmad, Anand Paul, Jiaji Wu, “Real Time Continuous Feature Extraction in Large Size Satellite Images”, *Journal of Systems Architecture*, (Elsevier)Vol.64, March 2016, pages 122-132. (first online 22nd November, 2015).

Corresponding author

112. Awais Ahmad, Anand Paul, Mazhar Rathore, Seungmin Rho, "Smart Cyber Society: Integration of Capillary Devices with High Usability based on Cyber-Physical Systems", *Future Generation Computer Systems (FGCS Elsevier)*, Vol. 60, March 2016, pages 493-503. Corresponding author
113. Awais Ahmad, Anand Paul, and Mazhar Rathore, "An Efficient Divide and Conquer Approach for Big Data Analytics in Machine to Machine Communication", *Neurocomputing (Elsevier)*, Vol.174, Part A, January 2016, Pages 439-453. Corresponding author
114. Mazhar R., Anand Paul, Awais Ahmad, Bowei Chen, Wen Ji, Bormin H., "Real-Time Big Data Analytical Architecture for Remote Sensing Application", **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (IEEE JSTARS)**, Vol. 8, Issue 10, 2015. Corresponding author.
115. Awais Ahmad, Anand Paul, Mazhar Rathore, Seungmin Rho, "Power Aware Mobility Management of M2M for IoT Communications", *Mobile Information Systems*, Volume 2015, Article ID 521093, 14 pages. Corresponding author.
116. T. Parameswaran, C. Palanisamy, Anand Paul, and S. Rho, "A Topology Control Method with Prediction of Lossy Links in Cluster based Mobile Ad-hoc Networks," *International Journal of Control and Automation (IJCA)*, SERSC, Vol. 8, No. 12, Dec. 2015. (SCOPUS) (ISSN: 2005-4297)
117. Jiaji Wu, Long Deng, and Anand Paul, "3D Terrain Real-Time Rendering Method Based on CUDA-OpenGL Interoperability", *IETE Technical Review* (Taylor and Francis), Vol. 32, Issue 6, 2015. (May 8th 2015 published online) Corresponding author
118. Sohail Jabbar, Abid Ali Minhas, Anand Paul, and Seungmin Rho, "E-MCDA : Extended - Multilayer Cluster Designing Algorithm for Network Lifetime Improvement of Homogenous Wireless Sensor Networks", *International Journal of Distributed Sensor Networks(IJDSN)*. Volume 2015, Article ID 902581, 21 pages.
119. Shaohui Liu, Anand Paul, Guochao Zhang, Gwanggil Jeon, "A Game Theory Based

Block Image Compression Method in Encryption Domain”, *Journal of Supercomputing (Springer)*, Vol.71, Issue 9, Pages 3353-3372. September 2015, (April 1st 2015 published online)

120. Hilal Jan ,Anand Paul, Abid Ali Minhas, Awais Ahmad, Sohail Jabbar , Mucheoul Kim "Dependability and reliability analysis of intra cluster routing technique", *Peer-to-Peer Networking and Applications (Springer)*, Vol.8, Issue 5, pp 838-850, September 2015. (Published online Oct 3,2014.)
121. Anand Paul, "Adaptive Search Window for High Efficiency Video Coding", *Journal of Signal Processing Systems (Springer)*, June 2015, Vol.79, Issue 3, pp 257-262. (September 10th 2013, Published online).
122. Anand Paul, Bo-Wei Chen and Wenmin Wang, "Bio-Inspired Mechanisms in Wireless Adhoc and Sensor Networks", (Editorial) *Journal of Sensor*, July 2015.
123. S. M. Usman Hashmi, Imran Shafi, Jamil Ahmad, Anand Paul and Sang Oh Park, "Using Physical Layer Clock Recovery to Augment Application Layer Time Synchronization", *Journal of Supercomputing (Springer)*, June 2015, Vol.71 pp 2153-2176. (February 21st 2015 published online)
124. Awais Ahmad, Mazhar Rathore, Anand Paul,, Bo-Wei Chen, "Data Transmission Scheme using Mobile Sink in Static Wireless Sensor Network", *Journal of Sensor* Vol. 2015 Article ID 279304, 8 pages.
125. Sohail Jabbar, Rabia Iram, Muhammad Imran, Awais Ahmad, Anand Paul, Abid Ali Minhas and Mohsin Iftikhar, "Energy Aware Simple Ant Routing Algorithm for Wireless Sensor Networks", *Mathematical Problems in Engineering*, Vol. 2015 Article ID 194532, 11 pages, April 29th 2015.
126. Hsin-Chun Tsai, Bo-Wei Chen, Karunanithi Bharanitharan, Anand Paul, Jhing-Fa Wang, and Hung-Chieh Tai, " User- centric Incremental Learning Model of Dynamic Personal Identification for Mobile Devices", *Multimedia Systems (Springer)*. February 2015, Vol.21, Issue 1, pp 121-130 (July 03rd 2013, published online).

127. Po-Yi Shih, Anand Paul, Jhing-Fa Wang and Yi-Hung Chen " Speech-Driven Talking Fast Using Embedded Confusable Systems for Real Time Multimedia", *Multimedia Tools and Application* (Springer). November 2014 Vol.73, Issue 1, Page 417-437, (August 17th 2013, Published online)
128. Hsin-Chun Tsai, Bo-Wei Chen, Jhing-Fa Wang, and Anand Paul, "Enhanced Long-Range Personal Identification Based on Multimodal Information of Human Features" *Multimedia Tools and Application* (Springer), November 2014, Vol.73, Issue 1, Page 291-307 (August 2nd 2013, Published online).
129. Anand Paul, "Real-Time Power Management for Embedded M2M using Intelligent Learning Methods", *ACM Transaction on Embedded Computing Systems*, Article No:148, Vol.13, Issue 5s, November 2014.
130. Sohail Jabbar, Abid Ali Minhas, Anand Paul, Seungmin Rho, " Multilayer Cluser Designing Algorithm for Lifetime Improvement for Wireless Sensor Networks", *Journal of Supercomputing* (Springer), Vol.70, Issue 1, October 2014.(February 09th 2014, Published online)
131. Anand Paul, S. Rho and K. Bharanitharan, " Interactive Scheduling for Mobile Multimedia Service in M2M environment" *Multimedia Tools and Application* (Springer), July 2014, Vol.71 Issue 1 pp.235-246. (May 29, 2013 published online)
132. Alfred Daniel, Awais Ahmad and Anand Paul, "Machine to Machine Communication - A Survey and Taxonomy", *Journal of Platform Technology*, Vol.2, No.2, June 2014
133. Kambombo Mtonga , Anand Paul, and S. Rho, " Time and ID-based Proxy Re-encryption Scheme", *Journal of Applied Mathematics (JAM)*, Volume 2014, Article ID 32198, 7 pages, May 2014.
134. Jiao Shi, Jiaji Wu, Anand Paul, and Maoguo Gong, " A Partition-based Active Contour Model Incorporating Local Information for Image Segmentation", *The Scientific World Journal*, Volume 2014, Article ID 840305, 19 pages, July 2014.
135. Xiangrong Zhang, Licheng Jiao, Anand Paul, Yongfu Yuan, Zhengli Wei, and Qiang

- Song , "Semi-supervised Particle Swarm Optimization for Classification", *Mathematical Problems in Engineering*, Volume 2014, Article ID 831235, 11 pages, May 2014.
136. Jiao Shi, Jiaji Wu, Anand Paul, Licheng Jiao and Maoguo Gong, "Change Detection in Synthetic Aperture Radar Image Based on Fuzzy Active Contour Models and Genetic Algorithms", *Mathematical Problems in Engineering*, Volume 2014, Article ID 870936, 15 pages, April 2014.
137. Awais Ahmad, Sohail Jabbar, Anand Paul, S. Rho, " Mobility Aware Energy Efficient Congestion Control in Wireless Sensor Network", *International Journal of Distributed Sensor Networks (IJDSN)* Volume 2014, Article ID 530416, 13 pages , March 04th 2014.
138. Anand Paul, "Dynamic Power Management for Ubiquitous Network Devices", *Advance Science Letters*, Vol. 19, Number 7, Pages 2046-2049., July 2013. ISSN: 1936-6612.
139. Anand Paul, "High Performance Adaptive Deblocking Filter for H.264/AVC", *IETE Technical Review* (Taylor and Francis), Vol.30, Issue 2, March-April 2013. ISSN: 0256-4602.
140. Anand Paul, Chen Bo-wei, Bharanitharan K. Jechang Jeong, and Jhing-Fa Wang, "Video Search and Indexing with Reinforcement Agent for Interactive Multimedia Services", *ACM Transaction on Embedded Computing Systems*, Vol.12, Issue 2, Article no:25, February 2013., ISSN: 1539-9087.
141. K.Bharanitharan, Jiun-Ren Ding, Anand Paul, Kuen-Ming Lee and Ting-Wei Hou, "Dependable Management Systems for Ubiquitous Camera Array Service in an Elder-Care Centre", *ACM Transaction on Embedded Computing Systems*. February 2013., Vol. 12, Issue 2, Article No: 29, ISSN: 1539-9087 (I.F. 1.178)
142. Anand Paul , K.Bharanitharan and Wu Jaiji, "Algorithm and Architecture for Adaptive Motion Estimation in High Efficiency Video Coding", *IETE Technical Review* (Taylor and Francis), Vol. 30, Issue 1, January-February 2013, ISSN: 0256-4602.

143. Anand Paul, Yung-Chuan Jiang, Jhing-Fa Wang and Jar-Ferr Yang "Parallel Reconfigurable Computing based Mapping Algorithm for Motion Estimation in Advance Video Coding", **ACM Transaction on Embedded Computing Systems**, Vol.11 Issue S2, Article No:40 August 2012, ISSN: 1539-9087.
144. Anand Paul, Jiaji Wu, Jerr-Fa Yang, Jechang Jeong, " Gradient-based Edge Detection for Motion Estimation in H.264/AVC", *IET Image Processing*, June 2011, Vol.5, Issue 4 Pages 323-327, ISSN: 1751-9659.
145. Jiaji Wu, Anand Paul, Yan Xing, Yong Fang, Jechang Jeong, Licheng Jiao, Guangming Shi, "Morphological dilation image coding with context weights prediction", *Signal Processing and Image Communication* (Elsevier), November 2010 Vol. 25, Issue 10, pages 717-728, ISSN: 0923-5965.
146. K. Bharanitharan, Anand Paul, Yung-Chuan Jiang, and Jhing Fa-Wang " Dynamic Parallel Computing Architecture for Video Processing", *Journal of Internet Technology*, November 2010, Vol.11 No.6, page 867-874, ISSN: 1607-9264.
147. Anand Paul, Yung Chuan Jiang, Jhing Fa Wang, " Computation Aware Scheme for Visual Signal Processing", *Journal of Software*, June 2010, Vol.5, No.6. pp 573-578, ISSN: 1796-217X. (Scopus Indexed)
148. Anand Paul, K. Bharanitharan and Jhing-Fa Wang, "Region similarity based edge detection for motion estimation in H.264/AVC", *IEICE Electron. Express*, Vol. 7, No. 2, pp.47-52, January 2010. ISSN: 1349-2543.
149. An-Chao Tsai, Anand Paul, Jia-Ching Wang, and Jhing-Fa Wang, "Intensity Gradient Technique for Efficient Intra Prediction in H.264/AVC" **IEEE Transaction on Circuits and Systems in Video Technology (IEEE TCSVT)**, May 2008. ISSN: 1051-8215.
150. Anand Paul, Jhing-Fa Wang, Jia-Ching Wang, An-Chao Tsai, and Jang-Ting Chen, "Projection Based Adaptive Window Size Selection for Efficient Motion Estimation in H.264/AVC " *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, Vol. E89-A, Issue 11, Nov. 2006. ISSN:

0916-8508.

International Conferences (Selected):

1. G Lavanya, P Ganeshkumar, S Vignesh, Anand Paul, "An Effective IoT Based Waste Management System Using Fuzzy Soft Expert Systems", 2023 IEEE International Conference on Fuzzy Systems (FUZZ), August 2023.
2. MZU Rehman, M Shanmuganathan, A Paul, "Attention-Based Underwater Oil Leakage Detection", 2023 IEEE Conference on Artificial Intelligence (CAI), 214-217, June 2023
3. A Balasubramaniam, T Balasubramaniam, A Paul, R Nayak, "Latent Pattern Identification Using Orthogonal-Constraint Coupled Nonnegative Matrix Factorization", Australasian Joint Conference on Artificial Intelligence, 675-689, 2022.
4. A Balasubramaniam, T Balasubramaniam, R Jeyaraj, A Paul, R Nayak, "Nonnegative Matrix Factorization to Understand Spatio-Temporal Traffic Pattern Variations During COVID-19: A Case Study", Australasian Conference on Data Mining, 223-234, 2021.
5. Ateeq Ur Rehman, Rizwan Tariq, Abdul Rehman, Anand Paul, "Collapse of Online Social Networks: Structural Evaluation, Open Challenges, and Proposed Solutions" IEEE GlobeCom 2020.
6. Ateeq Ur Rehman, Aimin Jiang, Abdul Rehman, Anand Paul, "Weighted based trustworthiness ranking in social internet of things by using soft set theory" , 2019 IEEE 5th International Conference on Computer and Communications (ICCC)
7. Anand Paul, Awais Ahmad, Murad Khan, Gwanggil Jeon, "Smart contract's interface for user centric business model in blockchain", Proceedings of the 34th ACM/SIGAPP Symposium on Applied Computing, pp.709-714, April 2019.
8. Hojae Son, Anand Paul, Gwanggil Jeon, "Country Interest Analysis Based on Long-

- Term Short-Term Memory (LSTM) In Decentralized System", 2018 IEEE International Conference on Data Mining Workshops (ICDMW), pp.115-119, November 2019.
9. S Din, A Paul, A Ahmad, SH Ahmed, G Jeon, DB Rawat, "Hierarchical architecture for 5g based software-defined intelligent transportation system", IEEE INFOCOM 2018-IEEE Conference on Computer Communications Workshops, April 2018.
 10. S Jeon, A Paul, SH Son, Y Eun, "Sleep Position Management System for Enhancing Sleep Quality using Wearable Devices", Proceedings of the 16th ACM Conference on Embedded Networked Sensor Systems, 2018.
 11. Deblina Bhattacharjee and Anand Paul "Image Analysis using a novel learning algorithm based on Plant Intelligence"; NIPS / WiML 2017 workshop, Long Beach, California, USA, December 4 - 9, 2017
 12. Sadia Din , Anand Paul , Nadra Guizani , Syed Hassan Ahmed , Murad Khan , and M. Mazhar Rathore, "Features Selection Model for Internet of e-Health Things using Big Data" GLOBECOM 2017, Singapore December 4-8, 2017
 13. Hameed Pinjari, Anand Paul, Gwanggil Jeon, Seungmin Rho, "*Context-driven Mobile Learning Using Fog Computing*", *Pltcon 2018. , Jeju Island, South Korea*
 14. Sanghoon Jeon, Anand Paul, Haegju Lee, Yongsoon Eun, Sang Hyuk Son, "SleePS: Sleep Position Tracking System for Screening Sleep Quality by Wristbands", 2017 IEEE International Conference on System, Man and Cybernetics (SMC 2017), Banff, AB, Canada October 01 - 04 October 2017.
 15. Deblina Bhattacharjee and Anand Paul, "A Leukocyte Detection technique in blood smear images using Plant Growth Simulation Algorithm"; AAAI 2017: Proceedings of the 31st Association for the Advancement of Artificial Intelligence, San Francisco, USA, February 03-09 2017
 16. Rosemary K, Young-Yu K., Anand Paul and Kee-Young Yoo, "Multilevel Threshold Secret Image Sharing Based on the Chinese Remainder Theorem", 15th International Conference on Security and Management (SAM'16), Las Vegas, USA,

July 25-28, 2016.

17. Deblina Bhattacharjee, Anand Paul, “A Hybrid Search Optimization Technique Based on Evolutionary Learning in Plants”, The 7th International Conference on Swarm Intelligence, Bali, Indonesia, June 25-30, 2016.
18. Mazhar Rathore, Anand Paul, Awais Ahmad, Seungmin Rho, Muhammad Imran, Mohsen Guizani, “Hadoop Based Real-Time Intrusion Detection for High-Speed Networks”, IEEE Global Communication Conference Exhibition and Industry Forum, IEEE GLOBECOM 2016, December 4-10, 2016, USA.
19. Sivanagaraja Tatinati_, Yan Naing Aye, Anand Paul, Wei Tech Ang, Kalyana C. Veluvolu, “Three-Dimensional Modeling of Physiological Tremor for Hand-held Surgical Robotic Instruments”, Engineering in Medicine and Biology Society (EMBC), 2016 IEEE 38th Annual International Conference of the, Orlando, FL, USA 16-20 Aug. 2016.
20. Uthra K T, Anand Paul and Seungmin Rho, “An Adaptive Transcursive Algorithm for Depth Estimation for Deep Learning Networks”, 3rd International Conference Platform Technology and Service PlatCon 2016.
21. Awais Ahmad, Mazhar Rathore, Anand Paul, Seungmin Rho, Muhammad Imran, Mohsen Guizani, “A Multi-Parameter Based Vertical Handover Decision Scheme for M2M Communication in HetMANET”, IEEE Global Communication Conference Exhibition and Industry Forum, IEEE GLOBECOM 2015, December 4-10, 2015, San Diego, CA, USA.
22. Awais Ahmad, Mazhar Rathore, Anand Paul, “Integration of Capillary Devices in the Smart Society based Web of Things”, Proceedings of 3rd International Conference on Human-Agent Interaction (HAI’15), October 21, pp 269-273 <Published by ACM Digital Library> Daegu , South Korea.
23. Mazhar Rathore, Awais Ahmad, Anand Paul, and Gwanggil Jeon, “Efficient Graph-Oriented Transportation Using Internet of Things generated Big Data”, 11th International Conference on Signal Image Technology and Internet based

Systems, Nov 23-Nov 27, 2015, Bangkok, Thailand.

24. Awais Ahmad, Anand Paul, Mazhar Rathore and Seungmin Rho, "Big Data Analytical Architecture using Divide and Conquer approach in Machine to Machine Communication", International Workshop on Ubiquitous Wireless Sensor Systems (UWSS 2015) , Beijing, China, August 10-14, 2015.
25. M.Mazhar Rathore, Awais Ahmad, Anand Paul, Alfred Daniel, "Hadoop Based Real-Time Big Data Architecture for Remote Sensing Earth Observatory System", 6th ICCCNT 2015, July 13-15, 2015, Dallas, Texas, USA.
26. Thirunavukarasu B., Sathya C., T. Kalaikumaran, S.Karthik and Anand Paul, "Cumulative Component Prediction in Sustainable Agricultural Cultivation under IoT Environment", International Conference on Science, Technology, Engineering, and Management (ICSTEM '15) Singapore, 15th February 2015.
27. Thirunavukarasu B., Sathya C., T. Kalaikumaran, S.Karthik and Anand Paul, "Ubiquitous health care architecture in big data environment", 2nd International Conference on Innovations in Information Embedded and Communication Systems ICIIIECS'15
28. Alfred Daniel, Awais Ahmad, Mazhar Rathore, *Anand Paul*, "Queuing Model for Cognitive Radio (CR) Vehicular Network", 2nd International Conference on Platform Technology and Services (PlatCon'15), Jeju Island, South Korea, 26th - 28th January 2015.
29. Awais Ahmad, Alfred Dainel and Anand Paul, "Optimized Data Transmission Using Cooperative Devices in Clustered D2D Communication", ACM RACS 2014, Towson, USA, October 5-8, 2014.
30. Anand Paul "Graph based M2M for IoT Environment", ACM RACS 2013, Montreal , Canada, October 1-4, 2013.
31. Anand Paul, Yu-Hao Chin, "Graph Based Orange Computing Architecture for Cyber Physical Being", Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC), 2013 Asia-Pacific, Kaohsiung, Taiwan Oct

29 - Nov.1, 2013 pages 1-5.

32. Anand Paul, Bo-Wei Chen, J.Jeong and Jhing-Fa Wang, "Dynamic Power Management for Ubiquitous Systems", International Conference on Orange Technologies, Tainan, Taiwan, March 12-16, 2013.
33. Anand Paul and Bharanitharan K., "Adaptive Edge Detection for Motion Estimation in H.264/AVC", IEEE International conference on Image System Technique (IST 2010), July 1, 2 2010., Thessaloniki, Greece.
34. Anand Paul, Yung-Chuan Jiang and Jechang Jeong, "Parallel Reconfigurable Computing and its Application to Hidden Markov Model", The IET International Conference on Frontier Computing (IET-FC 2010), August 4-6, 2010, Taichung, Taiwan.
35. Anand Paul, Y C Jiang and Jhing-Fa Wang , "Computation Aware Scheme for Multi-Core Visual Signal Processing", The 2009 International Automatic Control Conference (IACC), Chinese Automatic Control Society (CACS 2009 International Conference), November 27-29, 2009, Taipei, Taiwan.
36. Anand Paul, Jhing-Fa Wang, Jerr-Fa Yang, "Adaptive Search Range Selection Scalable Video Coding Extension of H.264/AVC" TENCON Hyderabad, India, November 18-21, 2008.
37. An-Chao Tsai, Anand Paul, Jai-Ching Wang and Jhing-Fa Wang. "Efficient Intra Prediction in H.264 Based on Intensity Gradient Approach", International Symposium on Circuits and Systems (ISCAS), New Orleans, May 27-30, 2007.
38. An-Chao Tsai, Anand Paul, Jia-Ching Wang and Jhing-Fa Wang, "Programmable Logic Array Design for H.264 Context - Based Adaptive Variable Length Coding", TENCON, Hong Kong, 14-17 November, 2006.
39. Jhing-Fa Wang, Jia-Ching Wang, Jang-Ting Chen, An-Chao Tsai, Anand Paul," A Novel Fast Algorithm for Intra Mode Decision in H.264/AVC Encoders", 2006 IEEE International Symposium on Circuits and Systems(ISCAS), Kos Greece, May 21-24,2006.

40. Jang-Ting Chen, Jia-Ching Wang, Jhing-Fa Wang, An-Chao Tsai, and Anand Paul,” A Novel Dominant Edge Strength Algorithm for Intra Prediction in H.264/AVC Encoders”, 2006 Picture Coding Symposium (PCS), China Beijing, 24-26 April 2006.
41. Anand Paul, T.A.A. Victorie, A.E. Jeyakumar, “Particle Swarm approach for Retiming in VLSI”, 2003, 46th IEEE Midwest Symposium on Circuits and Systems, (MWSCAS 2003) December 27-30c, Cairo , Egypt. 2003. pp. 1532-1545.

Patent:

1. Karthik S, Nidhya R, Karthikeyan N, Anand Paul, Vijay S R, Yuvaraju B N, Bhavadharini B., Blockchain Technology Based IoT Consensus Protocol for Smart Home., August 2020, Innovation Patent (Australian Patent).
2. S. Rho, Yunyoung Nam, Anand Paul, Bo-Wei Chen and Wen Ji, “Method and Apparatus for Augmenting Video Content”, July 2015 (10-2015-0094241) - Patent submitted (Korean Patent).
3. S. Rho, Yunyoung Nam, Anand Paul, Alfred Daniel, and Awais Ahmed, “Cooperative Cognitive Intelligence for Internet of Vehicles”. April 2015 (10-2015-0046184) - Patent submitted (Korean Patent)
4. Jhing-Fa Wang, Anand Paul and Jai-Ching Wang, “Method for determining size of adaptive window applied in motion estimation and application thereof”, (Taiwan Patent), Application date : 2008-06-05, Patent Application Number : 97120985, 2016-TW. Publication date: 2009-12-16, Patent Publication Number : 200952492.

Books

1. Anand Paul, Naveen Chilamkurti, Alfred Daniel and Seungmin Rho, “Fundamental of Intelligent Vehicular Network”, Morgan Hoffman publisher. (Elsevier), September 2016.

2. Rathinaraja Jeyaraj, Ganeshkumar Pugalendhi and Anand Paul, “Big Data with Hadoop MapReduce - A Classroom Approach”, Apple Academic Press (CRC Press - Taylor and Francis Group) September 2020 , Copyright 2021.
3. Sandeep Kumar, Anand Nayyar, Anand Paul, “Swarm Intelligence and Evolutionary Algorithms in Healthcare and Drug Development”, CRC Press 2020.

MPEG Contribution :

Input Contribution



- 1 . Anand Paul, “Region of Block based Dynamic Video Processing for High Efficiency Video Coding”, **Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11 3rd Meeting: Guangzhou, CN, 7-15 October, 2010.**
Document : JCTVC-C283
WG11 Number : m18326

Anand Paul

February 22nd 2024

