



ANAND PAUL

FULL PROFESSOR



<http://ccmp.knu.ac.kr/people/professor.html>



anand@knu.ac.kr
paul.editor@gmail.com



+82-107930-9696

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 [I-140 approved]

Education:

- PhD in Electrical Engineering, [National Cheng Kung University, Taiwan], [2004 - 2010]
- BE in Electrical and Electronics Engineering, [Bharathiya University], [1998 - 2001]
- D.E.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] - Present

- 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 / Exploratory Data Analysis
6. Probability and Statistics
7. Statistical Inference
8. Regression Analysis
9. Deep Learning

10. Data Visualization
11. Data Mining / Recommendation System
12. Natural Language Processing (NLP)
13. Python Programming/R Programming
14. C++ Programming
15. Data Science for Biostatistics
16. AI in Healthcare and Biomedical Engineering
17. Ethical Implications and Responsible AI
18. Reinforcement Learning

Massive Open Online Course (MOOC)

1. Discrete Mathematics

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

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

2. Fundamentals of Data Science

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

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)
- AAAI Member
- ACM Member
- Top Researcher [Top 2% Scientist] published by Harvard [2021, 2022]
- **MPEG** (Moving Picture Expert Group) Delegate [m2m focus group].
- Board of Directors for Korea Multimedia Society [Since 2018]

Editorial Board Member:

- 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>
- PRICAI 2023 - Session Chair (Machine Learning and Deep Learning - I)
- ACM SAC 2014-2019 (Smart HCI Track Chair)

Reviewer for Top Conferences

- AAAI
- Neurips
- ICLR
- ICML
- ECML , ECAI

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/mlot> (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)

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. **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.
2. M Lolaev, SM Naik, **A Paul**, A Chehri, "Heuristic Weight Initialization for Diagnosing Heart Diseases Using Feature Ranking", Technologies 11 (5), 138, October 2023.
3. 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)
4. G Singh, R Jeyaraj, A Sharma, **A Paul**, "A Novel Data Management Scheme in Cloud for Micromachines", Electronics 12 (18), 3807, September 2023.
5. Yuvaraj Natarajan, ,Gitanjali Wadhwa ,K. R. Sri Preethaa and **Anand Paul**, "Forecasting Carbon Dioxide Emissions of Light-Duty Vehicles with Different Machine Learning Algorithms", Electronics 12 (10), 2288, May 2023.

6. 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*].
7. 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*]
8. 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
9. 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
10. 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
11. 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
12. 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.
13. 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.
14. B Subramanian, A Paul, J Kim, KWA Chee, "Metrics Space and Norm: Taxonomy to Distance Metrics", *Scientific Programming* 2022.

15. U Malik Gul, **A Paul**, KWA Chee, "Mathematical Modeling of Real-Time Systems Using Heun and Piecewise Methods", *Mathematical Problems in Engineering* , August 2022.
16. B Subramanian, J Kim, M Maray, **A Paul**, "Digital Twin Model: A Real-Time Emotion Recognition System for Personalized Healthcare", *IEEE Access*, 2022
17. T Singh, A Solanki, SK Sharma, A Nayyar, **A Paul**, "A Decade Review on Smart Cities: Paradigms, Challenges and Opportunities", *IEEE Access*", June 2022
18. 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.
19. 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
20. R Jeyaraj, **A Paul**, "A Constrained 2D Bin Packing Model for MapReduce Task Scheduling", *IEEE Access*, May 2022.
21. A Ganesan, **A Paul**, HC Seo, "Elderly People Activity Recognition in Smart Grid Monitoring Environment", *Mathematical Problems in Engineering*, March 2022
22. F Saeed, **A Paul**, H Seo, "A Hybrid Channel-Communication-Enabled CNN-LSTM Model for Electricity Load Forecasting", *Energies* 15 (6), 2263, March 2022.
23. 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.
24. 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.
25. 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.
26. 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.

27. 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.
28. 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.
29. 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
30. Gurwinder Singh, Anil Sharma, Rathinaraja Jeyaraj, Anand Paul, "Handling Non-Local Executions to Improve MapReduce Performance Using Ant Colony Optimization", **IEEE Access**, September 2021
31. Nematullo Rahmatov, Anand Paul, Faisal Saeed, Hyuncheol Seo, "Realtime fire detection using CNN and search space navigation", **Real Time Image Processing**, August 2021
32. M. MazharRathor, Anand Paul, Seungmin Rho, MuradKhan 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.
33. Muhammad Mazhar Rathore, Syed Attique Shah, Ahmed Awad, Dharendra Shukla, Shanmuganathan Vimal and Anand Paul, "A Cyber-Physical System and Graph-

Based Approach for Transportation Management in Smart Cities”, **MDPI Sustainability**, July 2021

34. 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
35. 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
36. 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.
37. M Junaid Gul, Barathi Subramanian, Anand Paul, Jeonghong Kim, "Blockchain for public health care in smart society", **Microprocessor and Microcontroller**, February 2021.
38. 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.
39. Bekhzod Olimov, Jeonghong Kim, Anand Paul , "DCBT-Net: Training Deep Convolutional Neural Networks With Extremely Noisy Labels" **IEEE Access**, December 2020.
40. 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.

41. 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.
42. 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.
43. 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 Transcation on Network Science and Engineering**, June 2020.
44. Sadia Din, Anand Paul, Awais Ahmad, "Smart embedded system based on demosaicking for enhancement of surveillance systems", **Computer and Electrical Engineering**, September 2020.
45. Anandkumar Balasubramaniam, Malik Junaid Jami Gul, Varun G Menon, Anand Paul, "Blockchain For Intelligent Transport System" **IETE Technical Review**, March 2020.
46. Ateeq Ur Rehman, Rizwan Ali Naqvi, Abdul Rehman, Anand Paul, Muhammad Tariq Sadiq, Dildar Hussain, "A trustworthy siot aware mechanism as an enabler for citizen services in smart cities", **MDPI Electronics**, Vol 9. Issue 6, June 2020.
47. Faisal Saeed, Anand Paul, P Karthigaikumar, Anand Nayyar, "Convolutional neural network based early fire detection", **Multimedia Tools and Applications**, Vol. 79, April 2020.
48. 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.
49. 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.

50. 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.
51. 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.
52. 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.
53. 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.
54. 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.
55. 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.
56. 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.

57. 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.
58. 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.
59. 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.
60. 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.
61. 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.
62. 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.
63. 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.
64. 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

65. 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.
66. Anand Paul, Rathinaraja Jeyaraj, "Internet of Things: A primer", *Human Behavior and Emerging Technologies*, Vol.1, Issue 1, pp. 37-47, January 2019.
67. 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.
68. 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.
69. 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.
70. 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.
71. 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
72. 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
73. M Mazhar Rathore, Anand Paul, Won-Hwa Hong, HyunCheol Seo, Imtiaz Awan,

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Input Contribution



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Anand Paul
South Korea

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References 1

Naveen Chilamkurti
La Trobe University
Phone: + 61 3 94793060
E-mail address: n.chilamkurti@latrobe.edu.au

Reference 2

Abdellah Chehri
Royal Military College of Canada
Phone: +1(819)962-1001
E-mail address: chehri@rmc.ca

Reference 3

Gwanggil Jeon
Incheon National University
Phone : +82-106341-5332
Email: gjeon@inu.ac.kr