



Professor Md. Abu Layek, Ph.D.

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 ResearchGate





Summary

Md. Abu Layek, PhD, SMIEEE received the B.Sc. (1st class 1st) and M.Sc. (1st class 1st) degrees from the Department of ICT, Islamic University, Kushtia, Bangladesh, in 2004 and 2006, respectively. He completed his Ph.D. in Computer Science and Engineering from Kyung Hee University, Republic of Korea, in 2019. He was the recipient of the Brain Korea 2021 and the President Scholarships. He was awarded the Woojung Education Scholarship for outstanding performance in his PhD studies. Currently, Dr. Layek is working as a professor with the Department of Computer Science and Engineering at Jagannath University, Dhaka, Bangladesh. He is also the director of the institutional quality assurance cell (IQAC) of Jagannath University. Dr. Layek won a HEQEP sub-project that greatly contributed to the new department. He is a senior member of the Institute of Electrical and Electrical Engineers (IEEE) and a Life Fellow of the Bangladesh Computer Society (BCS). His research interests include cloud computing, the Internet of Things, machine learning, screen content coding, and image quality assessment. He has over 50 published articles, book chapters, and conference articles. He also published one US patent and one Korean patent.




Employment History

- Apr 03, 2024 — till date  **Professor**, Department of Computer Science and Engineering, Jagannath University, Dhaka-1100, Bangladesh.
- Dec 19, 2019 – Apr 02, 2024  **Associate Professor**, Department of Computer Science and Engineering, Jagannath University, Dhaka-1100, Bangladesh.
- Apr 26, 2012 – Dec 18, 2019  **Assistant Professor**, Department of Computer Science and Engineering, Jagannath University, Dhaka-1100, Bangladesh.
- Apr 20, 2010 – Apr 25, 2012  **Lecturer**, Department of Computer Science and Engineering, Jagannath University, Dhaka-1100, Bangladesh.
- May 13, 2008 – Apr 19, 2010  **Lecturer**, Department of Information and Communication Technology, Islamic University, Kushtia-7003, Bangladesh.
- Mar 09, 2008 – May 12, 2008  **Lecturer**, Department of Computer Science and Telecommunication Engineering, Noakhali Science and Technology University, Sonapur, Noakhali-3814, Bangladesh.
- Apr 18, 2007 – Mar 08, 2008  **Instructor (Tech.) Computer**, Department of Computer, Barisal Polytechnic Institute, Alekhanda, Barisal-8200, Bangladesh.






Education

- 2014 – 2019  **Ph.D., Computer Science and Engineering, Kyung Hee University, South Korea** in Cloud Computing.
Thesis title: *Block-Wise Quality Optimization and Assessment for Screen Content Images*
Result: *Awarded*
Best Thesis in the CSE department
- 2005 – 2006  **M.Sc. Information and Communication Engineering, Islamic University, Kushtia, Bangladesh** in Mobile Ad-hoc Networks.
Thesis title: *Quality of Service-based Routing Protocols for Mobile Ad-Hoc Networks*.
Result: *First Class (First in position)*.







Education (continued)

- 2000 – 2005  **B.Sc. Information and Communication Engineering, Islamic University, Kushtia, Bangladesh** on Artificial Intelligence
Thesis title: *Bangla Handwritten Character Recognition System using Artificial Neural Networks.*
Result: *First Class (First in position).*
- 1998 – 1999  **Higher Secondary Certificate-1999, Kushtia Government College** from Science Group
Result: *First Division**
Secured 83.10% marks and placed 3rd in the district .
- 1991 – 1997  **Secondary School Certificate-1997, Panti Secondary School, Kushtia, Bangladesh** from Science Group
Result: *First Division**
Secured 82.80% marks and placed 1st in the examination center.

Scholarships and Awards

- Jan 2024  **Outstanding Young Professional Volunteer 2023.** IEEE Bangladesh Section.
- Mar 2014 – Feb 2019  **BK 21 Plus scholarship.** for supporting living expenses from Kyung Hee University, South Korea.
- Mar 2014 – Mar 2016  **President Scholarship.** for supporting tuition Fees from Kyung Hee University, South Korea.
- Mar 2016 – Mar 2017  **Woojung Education Scholarship.** for outstanding performance in the PhD studies, Booyoung Group, South Korea.
- Jul 2001 – Jun 2005  **University Scholarship.** for outstanding yearly results in B.Sc. in Information and Communication Engineering Department, Islamic University, Kushtia, Bangladesh.
- Jul 2005 – Jun 2006  **University Scholarship.** for outstanding yearly results in M.Sc. in Information and Communication Engineering Department, Islamic University, Kushtia, Bangladesh.
- 2000  **Education Board Scholarship.** Stood third amongst about 500 students of Kushtia government college examination center in the Higher Secondary Certificate examination (1999).
- 1998  **Upazilla Parishad Scholarship.** Stood first amongst about 2000 students of Khoksha Upazilla examination center in the Secondary School Certificate examination (1997).

Certification / Training

- 2021  **Transactional Analysis 101 (TA101).** Asha Counseling and Training Services, Coimbatore, India.
-  **Diploma in Neurolinguistic Programming (NLP).** SK Consultancy, India.
-  **One Year Certification on Psychodrama.** Asha Counseling and Training Services, Coimbatore, India.
-  **Cyber Security Foundation Professional Certificate.** Cyber Security Foundation.
-  **Online certification on NLP Practitioner.** ABNLP, IGNLP through Udemy.
- 2020  **Advanced Data Analysis Using Industry Accepted and Widely Popular Statistical Package.** Asia Connect through BbREN, UGC, Bangladesh.

Certification / Training (continued)

- 2017 ■ **Distance Learning Course on “Data Center Virtualization and Cloud Computing Infrastructure”.** Asia Connect through BbREN, UGC, Bangladesh.
- 2017 ■ **Test of Proficiency in Korean.** Obtained Level-1 in the “Test of Proficiency in Korean”, 16 July 2017, Ajou University, Republic of Korea.
- 2013 ■ **ORACLE DATABASE ADMINISTRATION WITH APPLICATION DEVELOPMENT.** One year training organized by the Bangladesh Computer Council, Dhaka, Bangladesh.
- **Award Leaders Training.** IProshika HRDC, Koitta, Manikganj organized by The Duke of Edinburgh’s Award Foundation, Bangladesh.
- **“Asia Pacific Regional Internet Governance Forum APriGF-2013.** State University of New York (SUNY), Seoul, Republic of Korea.
- 2011 ■ **Rover Scout Leader Basic Course.** Sher-E-Bangla Agricultural University, Dhaka.
- 2010 ■ **Research Methodology.** Center for Advanced Research in Humanity, University of Dhaka, Bangladesh.
- **Micro-controller and Real World Interfacing.** Atomic Energy Center, Dhaka Bangladesh.
- **SOFTWARE TESTING AND QUALITY ASSURANCE: CURRENT TRENDS WITH PRACTICAL ISSUES.** Islamic University of Technology, Gazipur, Bangladesh. Dhaka, Bangladesh.



Research Supervision/Guide

- PhD ■ **Aniruddha Rakshit**
Thesis title: *Computer Vision Based Feasibility, Transportability study of Automatic Vehicle Detection and Classification*
Research field: *Computer Vision and Machine Learning*
Status: *Ongoing*
- **K. M. Mohiuddin**
Thesis title: *Cyber Security Framework for the Financial Institutions of Bangladesh*
Research field: *Cybersecurity*
Status: *Ongoing*
- **Farzana Akter Ripa**
Thesis title: *Advancing Plant Health: Deep Learning Approaches for Accurate Plant Disease Detection*
Research field: *Machine Learning*
Status: *Ongoing*
- **Ayesha Aziz Prova**
Thesis title: *Advancements in E-Mental Health Data Analytics through Natural Language Processing and Deep Learning*
Research field: *Machine Learning/ NLP*
Status: *Ongoing*








Other Experiences

- Nov 2024 – Till Date ■ **Director (Institutional Quality Assurance Cell, IQAC,** Jagannath University, Dhaka-1100, Bangladesh.

Other Experiences (continued)

- Jan 2011 – Dec 2013  **Sub Project Manager (SPM)**, Re-engineering of the Information Technology Research and Resource Center (ITRRC), a Sub Project of HEQEP, UGC and World Bank. Implemented at the Department of Computer Science and Engineering, Jagannath University, Dhaka-1100, Bangladesh.
- Dec 2013 – Feb 2014  **Director (Networking and IT, now ICT CELL)**, Jagannath University, Dhaka-1100, Bangladesh.
- Jan 2022 – Jan 2024  **Director (M.Sc. in CSE Professional Program)**, Department of Computer Science and Engineering, Jagannath University, Dhaka-1100, Bangladesh.
- Feb 2020 – Till Date  **Branch Counselor**, IEEE JnU Student Branch, Jagannath University, Dhaka-1100, Bangladesh.
- Feb 2013 – Feb 2014  **Award Coordinator**, The Duke of Edinburgh's International Award Program, Jagannath University, Dhaka-1100, Bangladesh.
- Oct 2011 – Till Date  **Rover Scout Leader**, Jagannath University Rover Scouts Group, Jagannath University, Dhaka-1100, Bangladesh.
-  **Director of ITRRC Research Lab**, Department of Computer Science and Engineering, Jagannath University, Dhaka-1100, Bangladesh.
A group of present and past students of Computer Science and Engineering, Jagannath University conducting voluntary academic and research activities, Quiz, Programming and Project Competition on-class and online.
- June 2024 – Till Date  **Director of ITRRC Cyber Security Research Lab**, Department of Computer Science and Engineering, Jagannath University, Dhaka-1100, Bangladesh.
A special wing of the ITRRC Research Lab dedicated to advanced Cyber Security Research, Cloud and Edge Security etc.


Notable Committees

- Feb 2014 - Feb 2025  **Secretary**. IEEE Computer Society Bangladesh Chapter
- 22 – 23 Nov, 2024  **Organizing Chair**. 2024 IEEE Computer Society Bangladesh Chapter Symposium (IEEECSBDCSymposium24), to be held at the Jagannath University, Bangladesh.
- 25 – 26 Sep, 2024  **Conference Secretary**. 2024 IEEE CONFERENCE ON COMPUTING, APPLICATIONS AND SYSTEMS (COMPAS), held at the CUET IT Business Incubator, Chattogram, Bangladesh.
- 09 - 22 Feb, 2024  **Convener of the CSE Day 2024**. Organized by the Department of CSE, Jagannath University, Dhaka, Bangladesh.
- Aug 2019 – Till Date  **Session Chair and Co-chairs**. STI-2019, STI-2020, IEEE CS BDC SS-2020, IEEE CS BDC SS-2021, BIM-2021, STI-2022, STI-2023, NCIM-2023, COMPAS-2024
-  **TPC Members**. STI 2019, STI 2020, STI-2019, STI-2020, STI-2021, TCCE-2020, BIM-2021, ICEEICT-2021, IEEE CS BDC SS-2020, IEEE CS BDC SS-2021, IC4IR-2021, STI-2022, STI-2023, NCIM-2023, COMPAS-2024.
-  **Journal Reviewers**. IEEE Access, The Computer Journal, Oxford University Press, c) KSII Transactions on Internet and Information Systems


Notable Committees (continued)


Jul 2021 – Till Date	■ Editorial Board Member. International Journal of Computer Vision & Signal Processing (ISSN: 2186-1390).
Jun 2011 – Feb 2014, Jan 2020 – till date	■ Member of the Library Automation Committee. Jagannath University, Dhaka, Bangladesh.
Jun 2011 – Feb 2014, Aug 2019 – till date	■ Member of the Planning Committee. Dept. of Computer Science & Engineering, Jagannath University, Dhaka, Bangladesh.
18 -22 Dec, 2011	■ Convener of the Study Tour. Study Tour “APPLET-2011”, Organized by the Department of CSE, Jagannath University and ITRRC, HEQEP.
17th - 21st May, 2013	■ Convener of the CSE Carnival 2013. Organized by the Department of CSE, Jagannath University and ITRRC, HEQEP.
18 - 22 Nov, 2013	■ Convener of the Study Tour. Study Tour “MOVE-2013”, Organized by the Department of CSE, Jagannath University and ITRRC, HEQEP.
Nov 2012 - July 2013	■ Coordinator. Training on MATLAB, Training on Advanced Networking, Training on Advanced Database, Training on Mobile Application Development, Training on Embedded System, and some other short courses held from November 2012 – July 2013 to fulfill the requirement of the project proposal ITRRC, HEQEP, Jagannath University, Dhaka.
Nov 2011 – Feb 2014	■ Technical Member. A-Unit Admission Test Examination Conducting Committee 2010, Faculty of Science, Jagannath University, Dhaka, Bangladesh.
May 2008 – Apr 2011, Aug 2019 – till date	■ Member of the Planning Committee. Dept. of Information & Communication Engineering, Islamic University, Kushtia, Bangladesh.
Apr 2012 – Feb 2014, Jul 2020 – Jun 2022	■ Member of the Executive Committee. Faculty of Science, Jagannath University, Dhaka, Bangladesh.
May 2022 – Till Date	■ Member of E-Nothi Implementation Committee. Jagannath University, Dhaka, Bangladesh.
Sep 2021 – Dec 2021	■ Member of the Organizing Committee. Idea Contest, Organized by the University Grants Commission, Bangladesh.
Dec 2010 – Feb 2014	■ Member of the ICT Committee. Jagannath University, Dhaka, Bangladesh.
27 – 29 Mar, 2009	■ Organizing Secretary. National Workshop on Network and ISP Setup with LINUX, 27-29 March 2009, department of ICE, Islamic University, Kushtia, Bangladesh.
May 2008 – Apr 2010	■ Member of the Executive Committee. Faculty of Applied Science & Technology, Islamic University, Kushtia, Bangladesh.
Jul 2005 – Oct 2006	■ Vice-President of the Student Association . Department. of Information and Communication Technology, Islamic University, Kushtia., Bangladesh.

Notable Committees (continued)


Feb 2001 – May 2003  **President of the Programming Club.** Department. of Information and Communication Technology, Islamic University, Kushtia., Bangladesh.


Professional Memberships

Since 2020  **Senior Member of IEEE.** The Institute of Electrical and Electronic Engineers, Membership number - 95034273.

Since 2022  **Life Fellow of BCS.** Bangladesh Computer Society, Membership number - Mo2598.


Research Grants

Jan 2011 – Feb 2014  **HEQEP Project** re-engineering of the Information Technology Research and Resource Center (ITRRC), a sub-project of the Higher Education Quality Enhancement Project(HEQEP), UGC and World Bank. Implemented at the Department of Computer Science and Engineering, Jagannath University, Dhaka-1100, Bangladesh.



Jul 2023 – Jun 2024  **Special Research Grant** Towards Improved Brain Disease Detection: A Hybrid Approach with Integrated Image Segmentation and Classification for fMRI Analysis, Special Research Grant, 2023-24, Ministry of Science and Technology, Bangladesh.


 **Research and Development Grant** An Advanced Image Segmentation Model for fMRI Image: A Residual 3D- UNet Approach, Ministry of Science and Technology, R&D 2023-24, Ministry of Science and Technology, Bangladesh.

Jul 2021 – Jun 2022  **Research Grant, UGC** Image quality assessment to support image/video delivery on a distributed cloud environment, Research Fund, University Grants Commission, 2020-21

Jun 2020 – Till Date  **JnU Research Grant** Received Research Grants from Jagannath University for the years 2021-22, 2022-23, 2023-2024.

Patents

2020  **United States Patent**, Dynamic splitting algorithm for splitting a desktop screen into non-overlapping equalsize blocks,  Google Link,  Justitia Link

2017  **Korean Patent**, 데스크톱 스크린을 비중첩 동 일 크기 블록으로 분할하기 위 한 동적 분할 알고리즘".

Research Publications

Journal Articles

1 M. A. Alam, M. R. U. Z. Sajib, F. Rahman, *et al.*, "Implications of big data analytics, ai, machine learning, and deep learning in the health care system of bangladesh: Scoping review," *Journal of Medical Internet Research*, vol. 26, e54710, 2024.

2 M. A. Talukder, M. A. Layek, M. Kazi, M. A. Uddin, and S. Aryal, "Empowering covid-19 detection: Optimizing performance through fine-tuned efficientnet deep learning architecture," *Computers in Biology and Medicine*, vol. 168, p. 107789, 2024.

3 R. Islam and A. Layek, "Stackensemblemind: Enhancing well-being through accurate identification of human mental states using stack-based ensemble machine learning," *Informatics in Medicine Unlocked*, p. 101405, 2023.

- 4 M. D. Hossain, T. Sultana, M. A. Hossain, *et al.*, "Dynamic task offloading for cloud-assisted vehicular edge computing networks: A non-cooperative game theoretic approach," *Sensors*, vol. 22, no. 10, p. 3678, 2022.
- 5 S. K. M. Md. Aslam Hossain and M. A. Layek, "Image manipulation analysis using styleface generative adversarial network," *Jagannath University Journal of Science*, vol. 8, no. 2, pp. 55–66, 2022.
- 6 T. M. Nasrullah, M. M. Islam, M. A. Uddin, *et al.*, "Device agent assisted blockchain leveraged framework for internet of things," *IEEE Access*, vol. 11, pp. 1254–1268, 2022.
- 7 A. Saleem, Y. Xu, R. A. Khan, I. Rasheed, Z. U. A. Jaffri, and M. A. Layek, "Statistical characteristics of 3d mimo channel model for vehicle-to-vehicle communications," *Wireless Communications and Mobile Computing*, vol. 2022, no. 1, p. 9 090 494, 2022.
- 8 N. Jahan, A. Nesa, and M. A. Layek, "Parkinson's disease detection using resnet50 with transfer learning," *International Journal of Computer Vision and Signal Processing*, vol. 11, no. 1, pp. 17–23, 2021.
- 9 M. A. Layek, M. Z. Mahmud, M. R. Islam, M. S. Monira, A. S. Uddin, and S. Afroz, "Center emphasized structural contrast and a saliency-induced image quality index," *Jagannath University Journal of Science*, 2021.
- 10 M. A. Layek, M. R. Islam, M. H. Mahi, and A. Akhter, "Comparison of loss functions in blind image quality assessment using a deep bi-linearly pooled convnet," *Jagannath University Journal of Science*, vol. 7, no. 2, pp. 11–21, 2021.
- 11 M. Rahman, M. A. Jidney, M. A. Layek, U. K. Acharjee, and M. Z. Mahmud, "S-shaped slotted multiband high-frequency uwb antenna for 5g applications," *Jagannath University Journal of Science*, 2021.
- 12 S. Choi, T. P. Le, Q. D. Nguyen, M. A. Layek, S. Lee, and T. Chung, "Toward self-driving bicycles using state-of-the-art deep reinforcement learning algorithms," *Symmetry*, vol. 11, no. 2, p. 290, 2019.
- 13 M. A. Layek, T. Chung, and E.-N. Huh, "Remote distance measurement from a single image by automatic detection and perspective correction," *KSII Transactions on Internet and Information Systems (TIIS)*, vol. 13, no. 8, pp. 3981–4004, 2019.
- 14 M. A. Layek, A. S. Uddin, T. P. Le, T. Chung, and E.-N. Huh, "Center-emphasized visual saliency and a contrast-based full reference image quality index," *Symmetry*, vol. 11, no. 3, p. 296, 2019.
- 15 N. T. Thu, M. A. Layek, and E. N. Huh, "An effective vision-based self-navigation system for autonomous indoor vehicle," *정보과학회 컴퓨팅의 실제 논문지*, vol. 25, no. 7, pp. 351–356, 2019.
- 16 N. T. Thu, N. T. Dung, A. Hossain, A. Layek, and E.-N. Huh, "A proposed hybrid video encoding in low bit rate environment," *한국정보과학회 학술발표논문집*, pp. 1677–1678, 2018.
- 17 M. A. Alam, M. R. U.-Z. Sajib, F. Rahman, *et al.*, "Implication of big data analytics, artificial intelligence, machine learning and deep learning in public health sector of bangladesh: A scoping review," *Journal of Medical Internet Research*, 2017.
- 18 Q. T. Ngo, L. Md. Abu, X. Q. Pham, S. Lee, and E.-N. Huh, "A remote display qoe improvement scheme for interactive applications in low network bandwidth environment," *Multimedia Tools and Applications*, vol. 76, pp. 22 217–22 241, 2017.
- 19 M. A. Layek, T. Chung, and E.-N. Huh, "Adaptive desktop delivery scheme for provisioning quality of experience in cloud desktop as a service," *The Computer Journal*, vol. 59, no. 2, pp. 260–274, 2016.
- 20 M. A. Layek, T. Chung, and E.-N. Huh, "Efficient screen splitting methods-a case study in block-wise motion detection.," *KSII Transactions on Internet and Information Systems (TIIS)*, vol. 10, no. 10, pp. 5074–5094, 2016.
- 21 M. M. Rahman, M. Abdullah-Al-Mahmud, M. A. Nashir, and M. A. Layek, "Performance evaluation of tcp over heterogeneous network," *Journal of Applied Science and Technology*, vol. 5, no. 1, pp. 1–7, 2007.

- 22 M. M. Rahman and M. A. Layek, "Quality of service based aodv," *Journal of Applied Science and Technology*, vol. 5, no. 1, pp. 55–62, 2007.

Conference Proceedings

- 1 N. S. Sizan, D. Dey, M. S. Mia, and M. A. Layek, "Revolutionizing agriculture: An iot-driven ml-blockchain framework 5.0 for optimal crop prediction," in *2023 5th International Conference on Sustainable Technologies for Industry 5.0 (STI)*, IEEE, 2023, pp. 1–6.
- 2 T. A. Suchi, M. A. Rabbi, and M. A. Layek, "Effective feature selection and soft voting classifier based diabetes detection using machine learning approaches," in *2023 International Conference on Next-Generation Computing, IoT and Machine Learning (NCIM)*, IEEE, 2023, pp. 1–7.
- 3 M. D. Hossain, W. ur Rahman, T. Sultana, *et al.*, "Collaborative task offloading for cloud assisted mec-enabled vehicular networks," in *한국정보과학회 학술발표논문집*, 2021, pp. 153–155.
- 4 N. Jahan, A. Nesa, and M. A. Layek, "Parkinson's disease detection using cnn architectures with transfer learning," in *2021 International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems (ICSSES)*, IEEE, 2021, pp. 1–5.
- 5 M. D. Hossain, M. A. Layek, T. Sultana, *et al.*, "Orchestration-based task offloading for mobile edge computing in small-cell networks," in *Proceedings of International Joint Conference on Computational Intelligence: IJCCI 2019*, Springer Singapore, 2020, pp. 629–641.
- 6 M. A. Hossain, N. T. Thu, M. I. Hossain, *et al.*, "An analysis of post-processing for background subtraction," in *Proceedings of the KIISE Korea Computer Congress*, 2019, pp. 1403–1405.
- 7 M. D. Hossain, T. Sultana, M. A. Layek, *et al.*, "Dynamic task offloading for ultra-dense mobile edge computing," in *한국정보과학회 학술발표논문집*, 2019, pp. 252–254.
- 8 M. I. Hossain, M. A. Hossain, M. A. Layek, M. D. Hossain, M. Kim, and E.-N. Huh, "Anomaly detection based on error distribution and clustering," in *한국정보과학회 학술발표논문집*, 2019, pp. 1144–1146.
- 9 M. A. Layek, S. Afroz, A. S. Uddin, *et al.*, "Space and view efficiency of hangeul texts," in *한국정보과학회 학술발표논문집*, 2019, pp. 646–648.
- 10 M. A. Layek, S. Afroz, A. S. Uddin, *et al.*, "Syllable-based representation styles of romanized-hangeul and english texts to facilitate vertical writing," in *한국정보과학회 학술발표논문집*, 2019, pp. 605–607.
- 11 M. A. Layek, M. D. Hossain, M. I. Hossain, *et al.*, "Importance of center-block in image quality assessment," in *한국정보과학회 학술발표논문집*, 2019, pp. 1359–1361.
- 12 M. A. Layek, N. T. Thu, S. Yu, T. Chung, and E.-N. Huh, "Center-emphasized gradient-feature based quality assessment method for screen content images," in *2019 Eleventh International Conference on Ubiquitous and Future Networks (ICUFN)*, IEEE, 2019, pp. 257–262.
- 13 M. S. Monira, M. A. Layek, A. S. Uddin, T. Chung, and S.-H. Bae, "Analyzing the behavior of different class of iqa methods on various distortion types," in *한국정보과학회 학술발표논문집*, 2019, pp. 951–953.
- 14 A. S. Uddin, M. S. Monira, M. A. Layek, S.-y. Choi, S.-H. Bae, and T. Chung, "Comparing and verifying the writing efficiency of hangeul over other languages," in *한국정보과학회 학술발표논문집*, 2019, pp. 652–654.
- 15 M. D. Hossain, T. Sultana, M. A. Layek, *et al.*, "Performance analysis of mobile edge computing in 5g ultra-dense networks," in *한국정보과학회 학술발표논문집*, 2018, pp. 292–294.
- 16 M. A. Layek, A. S. Uddin, M. D. Hossain, *et al.*, "Cloud-based smart surveillance system using raspberry pi and yolo," in *한국정보과학회 학술발표논문집*, 2018, pp. 510–512.

- 17 M. A. Layek and E.-N. Huh, "Surveillance video compression to deliver through a very low-bandwidth network - a positive-negative frame difference approach," in *The 13th Asia Pacific International Conference on Information Science and Technology*, 2018, pp. 321-324.
- 18 N. T. Thu, Y. S. Lim, M. A. Layek, S. Y. Woo, and E.-N. Huh, "An efficient navigation method for self-driving robot in hallway environment," in *한국정보과학회 학술발표논문집*, 2018, pp. 289-291.
- 19 M. A. Hossain, M. A. Layek, N. T. Thu, and E.-N. Huh, "A novel idea for large-scale texture analysis and scene retrieval," in *한국통신학회 학술대회논문집*, 2017, pp. 463-464.
- 20 A. Layek, S.-y. Choi, T. Chung, *et al.*, "Gathering objects in four-rooms domain under partially observability," in *한국정보과학회 학술발표논문집*, 2017, pp. 865-867.
- 21 A. Layek, N. A. Vien, T. Chung, *et al.*, "Deep reinforcement learning algorithms for steering an under-actuated ship," in *2017 IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems (MFI)*, IEEE, 2017, pp. 602-607.
- 22 M. A. Layek, N. Q. Thai, M. A. Hossain, *et al.*, "Analysis of the effects of timing presets on the performance of h. 264/avc and h. 265/hevc video encoders," in *한국통신학회 학술대회논문집*, 2017, pp. 442-443.
- 23 M. A. Layek, N. Q. Thai, M. A. Hossain, *et al.*, "Performance analysis of av1 for video coding in very low bit rates," in *한국정보과학회 학술발표논문집*, 2017, pp. 118-120.
- 24 M. A. Layek, N. Q. Thai, M. A. Hossain, *et al.*, "Performance analysis of h. 264, h. 265, vp9 and av1 video encoders," in *2017 19th Asia-Pacific Network Operations and Management Symposium (APNOMS)*, IEEE, 2017, pp. 322-325.
- 25 A. Talukder, M. G. R. Alam, A. K. Bairagi, *et al.*, "An approach of cost optimized influence maximization in social networks," in *2017 19th Asia-Pacific Network Operations and Management Symposium (APNOMS)*, IEEE, 2017, pp. 354-357.
- 26 A. Talukder, M. A. Layek, and C. S. Hong, "A novel approach of viral marketing in social networks," in *한국정보과학회 학술발표논문집*, 2017, pp. 1265-1267.
- 27 N. Q. Thai, M. A. Layek, and E.-N. Huh, "A hybrid remote display scheme for interactive applications in band-limited environment," in *2017 Seventh International Conference on Innovative Computing Technology (INTECH)*, IEEE, 2017, pp. 167-173.
- 28 L. P. Tuyen, S.-y. Choi, T. Chung, M. A. Layek, and J. C. Jin, "Reinforcement learning of vehicle agent and art work trial using the learning trajectories," in *한국정보과학회 학술발표논문집*, 2017, pp. 719-721.
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