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**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW**  
**KARYA ILMIAH : PROSIDING**

Judul Karya Ilmiah : Implementation of Vehicle Traffic Analysis Using Background Subtraction in The Internet of Things (IoT) Architecture

Jumlah Penulis : 7 orang

Status Pengusul : Penulis Pertama

Identitas Prosiding :

- a. Judul Prosiding : The 2018 6th International Conference on Information and Communication Technology
- b. ISBN/ISSN : 978-1-5386-4572-0, Hal : 24-27
- c. Thn Terbit, Tempat Pelaks. : Bandung, 3-5 Mei 2018
- d. Penerbit/Organiser : Proceeding ICoICT 2018 dan terindek Scopus
- e. Alamat Repository/Web : Url artikel : DOI: 10.1109/ICoICT.2018.8528739
- f. Alamat Artikel :
- f. Terindeks di (jika ada) : <https://www.scopus.com/record/display.uri?eid=2-s2.0-85058405986&origin=resultslist&sort=plf-f&src=s&sid=1dd0d38105318d90ebc368ffc4410119&sot=autdocs&sdt=autdocs&sl=18&s=AU-ID%2855510072000%29&relpos=3&citeCnt=1&searchTerm=>

Kategori Publikasi Makalah :  Prosiding Forum Ilmiah Internasional  
 (beri ✓ pada kategori yang tepat)  Prosiding Forum Ilmiah Nasional

Hasil Penilaian Peer Review :

Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
	Reviewer I	Reviewer II	
a. Kelengkapan unsur isi prosiding (10%)	2,5	2,5	2,5
b. Ruang lingkup dan kedalaman pembahasan (30%)	7,5	7,0	7,25
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	7,0	7,0	7,00
d. Kelengkapan unsur dan kualitas terbitan/prosiding(30%)	7,0	7,0	7,00
<b>Total = (100%)</b>	<b>24,0</b>	<b>23,5</b>	<b>23,75</b>

Semarang,

Reviewer 2



Dr. Wahyudi, S.T., M.T.  
 NIP. 196906121994031001  
 Unit Kerja : Teknik Elektro FT UNDIP

Reviewer 1



Dr. Eng. Wahyul Amien Syafei, ST, MT  
 NIP. 197112181995121001  
 Unit Kerja : Teknik Elektro FT UNDIP



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Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Prosiding		Nilai Akhir Yang Diperoleh
	Internasional <input type="checkbox"/>	Nasional <input type="checkbox"/>	
a. Kelengkapan unsur isi prosiding (10%)	2,50		2,5
b. Ruang lingkup dan kedalaman pembahasan (30%)	7,50		7,5
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	7,50		7,0
d. Kelengkapan unsur dan kualitas terbitan/prosiding(30%)	7,50		7,0
<b>Total = (100%)</b>	<b>25,00</b>		<b>24,0</b>

**Catatan Penilaian Paper oleh Reviewer :**

- Kesesuaian dan kelengkapan unsur isi paper:** Makalah telah ditulis sesuai dengan kaidah penulisan proceeding IEEE. Terdapat abstract, introduction, system architecture yang memuat metodologi penelitian yang terstruktur, result and discussion, conclusion, dan references.
- Ruang lingkup dan kedalaman pembahasan:** Ruang lingkup makalah cukup fokus dengan pembahasan detil dari teori hingga implementasi sistem analisis trafik dalam arsitektur IoT.
- Kecukupan dan kemutakhiran data/informasi dan metodologi:** Referensi berasal dari paper-paper yang mutakhir. Terdapat 10 dari 11 referensi berasal dari 5 tahun terakhir
- Kelengkapan unsur dan kualitas terbitan:** Makalah telah terbit di proceeding IEEE dan telah terindeks di database IEEEExplore dan Scopus.

Semarang,  
 Reviewer 1



Dr. Eng. Wahyul Amien Syafei, ST, MT  
 NIP. 197112181995121001  
 Unit Kerja : Teknik Elektro FT UNDIP



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b. Ruang lingkup dan kedalaman pembahasan (30%)	7,50		7,0
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	7,50		7,0
d. Kelengkapan unsur dan kualitas terbitan/prosiding(30%)	7,50		7,0
<b>Total = (100%)</b>	<b>25,00</b>		<b>23,5</b>

**Catatan Penilaian Paper oleh Reviewer :**

- a) **Kesesuaian dan kelengkapan unsur isi paper:** Unsur makalah telah lengkap ada pendahuluan, metodologi, pembahasan, kesimpulan, dan daftar pustaka
- b) **Ruang lingkup dan kedalaman pembahasan:** Pembahasan cukup mendalam, fungsi cukup lengkap, namun pembahasan merupakan hal yang sederhana
- c) **Kecukupan dan kemutakhiran data/informasi dan metodologi:** Metodologi yang dipakai sudah biasa dilakukan, dan data referensi sebagian besar baru
- d) **Kelengkapan unsur dan kualitas terbitan:** Unsur makalah telah lengkap dan kualitas terbitan pada seminar internasional terindeks Scopus

Semarang,  
Reviewer 2

  
Dr. Wahyudi, S.T., M.T.  
NIP. 196906121994031001  
Unit Kerja : Teknik Elektro FT UNDIP

## Document details








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2018 6th International Conference on Information and Communication Technology, ICoICT 2018  
8 November 2018, Article number 8528739, Pages 24-27  
6th International Conference on Information and Communication Technology, ICoICT 2018;  
Bandung; Indonesia; 3 May 2018 through 4 May 2018; Category numberCFP18ICZ-USB;  
Code 142364

## Implementation of vehicle traffic analysis using background subtraction in the Internet of Things (IoT) architecture (Conference Paper)

Sofwan, A. , Surur, F.A. , Arfan, M. , Handoyo, E. , Yosua Alvin, A.S. , Somantri, M. ,  
Enda, W.S. 

Department of Electrical Engineering, Diponegoro University, Indonesia


### Abstract

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Vehicle traffic analysis is one of the features that are provided in a smart city application. A camera is used to capture vehicles that are moving through on the road. Background subtraction is applied in order to detect the moving object, i.e., Gaussian Mixture Model. The system is developed under the Internet of Things (IoT) architecture, which all devices are associated using Internet connection. The calculated value is transmitted into cloud and received at the virtual server. Data are saved to a database and are able to be accessed through a web interface. We observe the applied system provides a good performance in terms of average accuracy exceeds 95.64%. © 2018 IEEE.

### SciVal Topic Prominence

Topic: Sensor networks | Sensor nodes | wireless visual

Prominence percentile: 87.850 

### Author keywords

Background subtraction Gaussian Mixture Model Internet of Things Smart city Vehicle traffic

### Indexed keywords

Engineering controlled terms: Gaussian distribution Object detection Smart city Vehicles

Engineering uncontrolled terms: Background subtraction Calculated values Gaussian Mixture Model Internet connection  
Internet of thing (IOT) Smart city applications Vehicle traffic Virtual servers

Engineering main heading: Internet of things

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Design of Water Quality Control for Shrimp Pond Using Sensor-Cloud Integration

Somantri, M. , Sofwan, A. , Arfan, M.

(2018) *Proceedings - 2018 5th International Conference on Information Technology, Computer and Electrical Engineering, ICITACEE 2018*

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IoT and sensor networked smart product

Lee, H. , Kim, T. (2018) *ICIC Express Letters, Part B: Applications*

## References (11)

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- 1 Gubbi, J., Buyya, R., Marusic, S., Palaniswami, M.  
**Internet of Things (IoT): A vision, architectural elements, and future directions**

(2013) *Future Generation Computer Systems*, 29 (7), pp. 1645-1660. Cited 3547 times.  
doi: 10.1016/j.future.2013.01.010

[View at Publisher](#)

- 2 Kliem, A., Kao, O.  
**The Internet of Things Resource Management Challenge**

(2015) *Proceedings - 2015 IEEE International Conference on Data Science and Data Intensive Systems; 8th IEEE International Conference Cyber, Physical and Social Computing; 11th IEEE International Conference on Green Computing and Communications and 8th IEEE International Conference on Internet of Things, DSDIS/CPSCOM/GreenCom/iThings 2015*, art. no. 7396547, pp. 483-490. Cited 6 times.  
ISBN: 978-150900214-6  
doi: 10.1109/DSDIS.2015.21

[View at Publisher](#)

- 3 Sofwan, A., Sumardi, Ridho, M., Goni, A., Najib  
**Wireless sensor network design for landslide warning system in IoT architecture**

(2018) *Proceedings - 2017 4th International Conference on Information Technology, Computer, and Electrical Engineering, ICITACEE 2017*, 2018-January, pp. 280-283.  
ISBN: 978-153863946-7  
doi: 10.1109/ICITACEE.2017.8257718

[View at Publisher](#)

- 4 Ali, A., Hamouda, W., Uysal, M.  
**Next generation M2M cellular networks: Challenges and practical considerations**

(2015) *IEEE Communications Magazine*, 53 (9), art. no. 7263368, pp. 18-24. Cited 49 times.  
doi: 10.1109/MCOM.2015.7263368

[View at Publisher](#)

- 5 Holler, J., Tsiatsis, V., Mulligan, C., Avesand, S., Karnouskos, S., Boyle, D.  
**From Machine-To-Machine to the Internet of Things**

(2014) *From Machine-To-Machine to the Internet of Things*, pp. 1-331. Cited 149 times.  
<http://www.sciencedirect.com/science/book/9780124076846>  
ISBN: 978-012407684-6  
doi: 10.1016/C2012-0-03263-2

[View at Publisher](#)

- 6 Al-Fuqaha, A., Guizani, M., Mohammadi, M., Aledhari, M., Ayyash, M.  
**Internet of Things: A Survey on Enabling Technologies, Protocols, and Applications**

(2015) *IEEE Communications Surveys and Tutorials*, 17 (4), pp. 2347-2376. Cited 1551 times.  
<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=9739>  
doi: 10.1109/COMST.2015.2444095

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Energy efficient fog servers for Internet of Things Information Piece Delivery (IoTIPD) in a smart city vehicular environment

Igder, S. , Bhattacharya, S. , Elmirghani, J.M.H.  
(2016) *International Conference on Next Generation Mobile Applications, Services, and Technologies*

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- 7 Godbehere, A.B., Matsukawa, A., Goldberg, K.  
Visual tracking of human visitors under variable-lighting conditions for a responsive audio art installation

(2012) *Proceedings of the American Control Conference*, art. no. 6315174, pp. 4305-4312. Cited 72 times.  
ISBN: 978-145771095-7

- 8 Rout, D.K., Puhan, S.  
Video object detection using inter-frame correlation based background subtraction

(2013) *2013 IEEE Recent Advances in Intelligent Computational Systems, RAICS 2013*, art. no. 6745467, pp. 167-171. Cited 5 times.

ISBN: 978-147992178-2

doi: 10.1109/RAICS.2013.6745467

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- 9 Ramalingam, S., Varsani, V.  
Vehicle detection for traffic flow analysis  
(2016) *2016 IEEE International Carnahan Conference on Security Technology (ICCST)*, pp. 1-8. Cited 2 times.

- 10 Xu, Y., Dong, J., Zhang, B., Xu, D.  
Background modeling methods in video analysis: A review and comparative evaluation  
(2016) *CAAI Transactions on Intelligence Technology*, 1, pp. 43-60. Cited 53 times.  
01/01/2016

- 11 Jain, A., Basantwani, S., Kazi, O., Bang, Y.  
Smart surveillance monitoring system

(2017) *2017 International Conference on Data Management, Analytics and Innovation, ICDMAI 2017*, art. no. 8073523, pp. 269-273. Cited 4 times.

ISBN: 978-150904083-4

doi: 10.1109/ICDMAI.2017.8073523

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**Prof Robin Ram**

**Mohan Doss**

Keynote Speaker



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## OTHER SPEAKERS



**Deputy Head of School, Faculty of  
Science, Engineering and Built  
Environment, School of Information  
Technology**

**Deakin University, Australia**

Professor Robin Doss is the Deputy Head of the School of Information Technology at Deakin University, Australia. Prior to joining Deakin University, Robin was a part of the technical services group at Ericsson Australia and a research engineer at RMIT University. He holds a Bachelor's of Engineering from the University of Madras, India and a Masters and PhD from the Royal Melbourne Institute of Technology (RMIT), Australia.

Robin leads the Internet of Things (IoT) and Cyber Physical Systems(CPS) security program at the Deakin Centre for Cyber Security Research (CSSR) and is the Co-Director of the IoT research cluster at Deakin University, Australia. He leads a team of researchers and PhD students in the broad areas of communication systems and cyber security with a focus on

emerging domains such as IoT, pervasive computing and ambient intelligence. His research has been funded by the National Security Science and Technology (NSST) branch of the office of national security in collaboration with the Defence Signals Directorate (DSD), the Australian Research Council (ARC) and industry partners. From 2008 – 2009, he was part of the team of researchers funded through the Research Support for Counter Terrorism (RSCT) initiative of the Australian government to provide advice to the department of Prime Minister and Cabinet (PMC) on matters of national security. The high quality of his research is best evidenced by his strong track record of publications in high impact technical journals (IEEE Transactions) and top conferences (IEEE GLOBECOM, IEEE PERCOM, IEEE ICC) with more than 75 such publications. He is a senior member of the IEEE; founding chair of the future network systems and security (FNSS) conference series and associate editor of the journal of cyber physical systems.

My research interests are in the broad areas of communication systems, protocol design, wireless networks, security and privacy. Honours/ PhD students who would like to work with me are requested to send me a copy of their CV and transcripts. Please do not list me as a potential supervisor without receiving my acceptance.

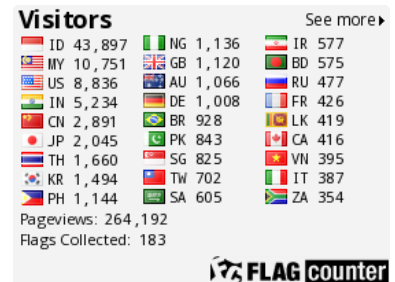
### Keynote Title: TBA

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### **Prof Robin Ram Mohan Doss**

**Deputy Head of School, Faculty of  
Science, Engineering and Built  
Environment, School of Information  
Technology  
Deakin University, Australia**

Professor Robin Doss is the Deputy Head of the School of Information Technology at Deakin University, Australia. Prior to joining Deakin University, Robin was a part of the technical services group at Ericsson Australia and a research engineer at RMIT University. He holds a Bachelor's of Engineering from the University of Madras, India and a Masters and PhD from the Royal Melbourne Institute of Technology (RMIT), Australia. Robin leads the Internet of Things (IoT) and Cyber Physical Systems(CPS) security program at the Deakin Centre for Cyber Security Research (CSSR) and is the Co-Director of the IoT research cluster at Deakin University, Australia. He leads a team of researchers and PhD students in the broad areas of communication systems and cyber security with a focus on emerging domains such as IoT, pervasive computing and ambient intelligence. His research has been funded by the National Security Science and Technology (NSST) branch of the office of national security in collaboration with the Defence Signals Directorate (DSD), the Australian Research Council (ARC) and industry partners. From 2008 – 2009, he was part of the team of researchers funded through the Research Support for Counter Terrorism (RSCT) initiative of the Australian government to provide advice to the department of Prime Minister and Cabinet (PMC) on matters of national security. The high quality of his research is best evidenced by his strong track record of publications in high impact technical journals (IEEE Transactions) and top conferences (IEEE GLOBECOM, IEEE PERCOM, IEEE ICC) with more than 75 such publications. He is a senior member of the IEEE; founding chair of the future network systems and security (FNSS) conference series and associate editor of the journal of cyber physical systems. My research interests are in the broad areas of communication systems, protocol design, wireless networks, security and privacy. Honours/ PhD students who would like to work with me are requested to send me a copy of their CV and transcripts. Please do not list me as a potential supervisor without receiving my acceptance.

**Keynote Title : IoT security**



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## Prof. Koo Voon Chet

Keynote Speaker



### OTHER SPEAKERS



### Faculty of Engineering and Technology, Multimedia University (MMU), Malaysia

Voon-Chet KOO graduated from University of Malaya in 1997, and received his MEngSc and PhD degrees in Microwave Engineering from the Multimedia University (MMU), Malaysia in 1999 and 2005, respectively. He is currently a full Professor of Multimedia University. His research interest includes remote sensing technologies, signal processing, and embedded system design. Prof Koo has been a principal consultant for various government agencies and engineering firms since 2000. He has published more than 100 papers in refereed journals, international conferences, 2 books, and 9 patents. He is also the recipient of the inaugural Young Engineer Award by the Institution of Engineers, Malaysia in 2004.

Prof. Koo has more than 20 years of experience in remote sensing and related technologies, particularly on high-resolution imaging system for environmental monitoring and earth resource management. He is a regular invited speaker in international conferences and has delivered guest lectures and

technical workshops to various universities, government agencies and private sectors, including Malaysia, Indonesia, Singapore, Vietnam, Taiwan, Hong Kong, Japan, and the United States.

Prof. Koo is presently the Director of Digital Lifestyle Research Institute, MMU, Past Chair of the Centre for Remote Sensing and Surveillance Technologies, MMU, Past Chair of the IEEE Geoscience and Remote Sensing Society Chapter, Malaysia Section, a registered Professional Engineer with Practicing Certificate, a Fellow of the ASEAN Academy of Engineering and Technology (AAET), and a senior member of IEEE. Prof. Koo is also the founder and the current CEO of a spin-off company of the university research centre. The company, iRadar, was incorporated in 2011 with primary focus to provide smart sensing solutions for environmental and vegetation growth monitoring.

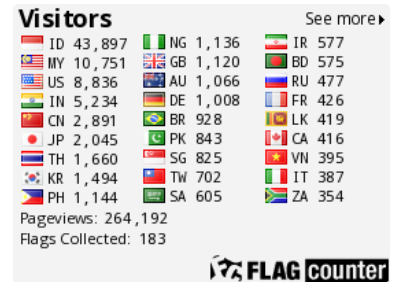
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ICoICT 2018 Organized By : Telkom University Indonesia and Multimedia University Malaysia



## **Prof. Koo Voon Chet**

### **Faculty of Engineering and Technology, Multimedia University (MMU), Malaysia**



Voon-Chet KOO graduated from University of Malaya in 1997, and received his MEngSc and PhD degrees in Microwave Engineering from the Multimedia University (MMU), Malaysia in 1999 and 2005, respectively. He is currently a full Professor of Multimedia University. His research interest includes remote sensing technologies, signal processing, and embedded system design.

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Prof. Koo is presently the Director of Digital Lifestyle Research Institute, MMU, Past Chair of the Centre for Remote Sensing and Surveillance Technologies, MMU, Past Chair of the IEEE Geoscience and Remote Sensing Society Chapter, Malaysia Section, a registered Professional Engineer with Practicing Certificate, a Fellow of the ASEAN Academy of Engineering and Technology (AAET), and a senior member of IEEE. Prof. Koo is also the founder and the current CEO of a spin-off company of the university research centre. The company, iRadar, was incorporated in 2011 with primary focus to provide smart sensing solutions for environmental and vegetation growth monitoring.

**Keynote Title : Remote Sensing**



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## Dr. Eng. Khoirul Anwar

Keynote Speaker



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### OTHER SPEAKERS



### Center for Advanced Wireless Technologies, School of Electrical Engineering Telkom University, Indonesia

Dr. Anwar graduated (cum laude) from the department of Electrical Engineering (Telecommunications), Institut Teknologi Bandung (ITB), Bandung, Indonesia in 2000 for his Bachelor degree (S.T.). He received Master and Doctor Degrees from Graduate School of Information Science, Nara Institute of Science and Technology (NAIST), Nara, Japan, in 2005 and 2008, respectively. He received best student paper award from the IEEE Radio and Wireless Symposium 2006 (RWS'06), California, USA, Best Paper Award of Indonesian Student Association (ISA 2007), Kyoto, Japan in 2007, Best Paper Presenter for the Advanced Technology in International conference on Sustainability for Human Security (SUSTAIN), Kyoto, October 2011, Indonesian Diaspora "Award for Innovation", Congress of Indonesian Diaspora, Los Angeles, USA, July 2012, Achmad Bakrie Award 2014, Jakarta, December 2014, and Anugerah of

Internationally Recognized Contributions from the Governor of West Java, Indonesia, December 2016, National Achievement Award by UKP-PIP Pancasila, Jakarta, August 2017.

Dr. Anwar was in University of Melbourne, Australia, 2007 and University of Oulu, Finland, 2010 as a visiting researcher. In September 2008, he was with the School of Information Science, Japan Advanced Institute of Science and Technology (JAIST) as an assistant professor. Since September 2016 Dr. Anwar is with the school of electrical engineering, Telkom University, Bandung, Indonesia as an associate professor and the director of the Center for Advanced Wireless Technologies (AdWiTech).

Dr. Anwar's technique is adopted by the international telecommunication union (ITU), ITU-R standard No. ITU-R S.2173 "Multi-carrier-based transmission techniques" also in ITU-R S.1878 "Multi-carrier Based Transmission Techniques for Satellite Systems". Dr. Anwar is the chairman of WG Radio and Technologies of Indonesia 5G Forum (i5GF) and also the chairman of Asia Pasific Telecommunity Wireless Group (AWG) Service and Applications (SA) since 2016. His research interests are network information theory, error correction coding, iterative decoding, coding for super-dense networks and signal processing for wireless communications. He serves as a reviewer for a number of main journals and conferences in the area of wireless communications, coding theory and signal processing. Dr. Anwar is a senior member of IEEE (Information Theory society, Communications society) and a member of IEICE, Japan.

## **Keynote Title: Massive Internet of Things Supporting Industry 4.0**

The Internet of Things (IoT) is predicted to contribute 11% to the global economy in 2025 according to some studies leading to the revolution of industry 4.0 for massive services. However, the problem of massive number of connections involving billions of devices are remaining unsolved in practice. In this talk, we try to solve the massive number of connection using the concept of coding theory combined with successive interference cancellation to maximize the success of multiple access mechanism.

Due to the nature of huge number of connecting devices, we prefer random access scheme rather than scheduling, called coded random access (CRA). We found that the proposed CRA multiple access scheme provides highest throughput among the current IoT technologies. The IoT with pure ALOHA achieves 0.18 packet/slot; IoT with slotted ALOHA provides 0.37 packet/slot; IoT with non-slotted carrier sense multiple access with collision avoidance (CSMA/CA) achieves 0.5-0.8 packet/slots; IoT with slotted CSMA/CA reaches 0.8 packet/slot, while IoT with the proposed CRA scheme can achieve 0.9-3.7 packet/slot, which is about 20x compared to the IoT with pure ALOHA scheme. Due to the unpredictable number of future connecting devices, we derive a theoretical network capacity based on the extrinsic information transfer (EXIT) chart analysis

to predict the rate and traffic expressing the number of connecting devices.

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### Dr. Eng. Khoirul Anwar

**Center for Advanced Wireless Technologies, School of Electrical Engineering  
Telkom University, Indonesia**

Dr. Anwar graduated (cum laude) from the department of Electrical Engineering (Telecommunications), Institut Teknologi Bandung (ITB), Bandung, Indonesia in 2000 for his Bachelor degree (S.T.). He received Master and Doctor Degrees from Graduate School of Information Science, Nara

Institute of Science and Technology (NAIST), Nara, Japan, in 2005 and 2008, respectively. He received best student paper award from the IEEE Radio and Wireless Symposium 2006 (RWS'06), California, USA, Best Paper Award of Indonesian Student Association (ISA 2007), Kyoto, Japan in 2007, Best Paper Presenter for the Advanced Technology in International conference on Sustainability for Human Security (SUSTAIN), Kyoto, October 2011, Indonesian Diaspora "Award for Innovation", Congress of Indonesian Diaspora, Los Angeles, USA, July 2012, Achmad Bakrie Award 2014, Jakarta, December 2014, and Anugerah of Internationally Recognized Contributions from the Governor of West Java, Indonesia, December 2016, National Achievement Award by UKP-PIP Pancasila, Jakarta, August 2017.

Dr. Anwar was in University of Melbourne, Australia, 2007 and University of Oulu, Finland, 2010 as a visiting researcher. In September 2008, he was with the School of Information Science, Japan Advanced Institute of Science and Technology (JAIST) as an assistant professor. Since September 2016 Dr. Anwar is with the school of electrical engineering, Telkom University, Bandung, Indonesia as an associate professor and the director of the Center for Advanced Wireless Technologies (AdWiTech).

Dr. Anwar's technique is adopted by the international telecommunication union (ITU), ITU-R standard No. ITU-R S.2173 "Multi-carrier-based transmission techniques" also in ITU-R S.1878 "Multi-carrier Based Transmission Techniques for Satellite Systems". Dr. Anwar is the chairman of WG Radio and Technologies of Indonesia 5G Forum (i5GF) and also the chairman of Asia Pasific Telecommunity Wireless Group (AWG) Service and Applications (SA) since 2016. His research interests are network information theory, error correction coding, iterative decoding, coding for super-dense networks and signal processing for wireless communications. He serves as a for a number of main journals and conferences in the area of wireless communications, coding theory and signal processing. Dr. Anwar is a senior member of IEEE (Information Theory society, Communications society) and a member of IEICE, Japan.

**Keynote Title : IoT in 5G**



## Md Shohel Sayeed, Ph.D

### Associate Professor, Faculty of Information Science and Technology, Multimedia University



Dr. Shohel has more than 22 years meritorious working experience and he holds a challenging career which combines research, versatile administration and excellent teaching.

His core research interest is in the area of Biometrics, big data, cloud computing, information security, image and signal processing, pattern recognition and classification.

He has published over 50 research papers in international peer-reviewed journals and international conference proceedings as a result of his research work. His research works have been published by high ranked peer- reviewed journals such as IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), International Journal of Pattern Recognition and Artificial Intelligence (IJPRI), Expert Systems with Applications, Discrete Dynamics in Nature and Society (DDNS) as well as several peer- reviewed International journals. Several of his findings have been presented in a number of well recognized IEEE conferences as well. He has been appointed technical paper for Journal of Pattern Recognition Letters, IEEE Transaction on Neural Networks, IEEE Transactions on Automation Science and Engineering, Journal of Computer Methods and Programs in Biomedicine and International Journal of Computer Theory and Engineering. He has also been invited to review technical papers for several international conferences. In recognition of his professional contribution, he has obtained recognition as a member of IEEE Computer Society, IEEE Communication Society and International Association of Computer Science and Information Technology (IACSIT).

Dr. Shohel has been a member of Multimedia University since 2001 and now he serves as an Associate Professor and the Chairperson of Industrial Training programme of the Faculty of Information Science and Technology.

He received his doctor of philosophy from Multimedia University in Engineering, specializing in hand signature verification, and holds masters of information technology degree from the University Kebangsaan Malaysia, specializing in industrial computing. He received his Bachelor of Science degree in Agricultural science from Bangladesh Agricultural University.

**Speech Title : Big Data: Trends, Challenges & Opportunities**

## Esa Prakasa, Ph.D

### Research Center for Informatics, Indonesian Institute of Sciences (LIPI), Indonesia



Esa Prakasa received B.Eng. in Nuclear Engineering (1998) and M.Eng. in Electrical Engineering (2001) from Universitas Gadjah Mada, Indonesia. He obtained his PhD in Electrical and Electronic Engineering (2014), from Universiti Teknologi PETRONAS, Malaysia. He is a researcher at Research Center for Informatics, Indonesian Institute of Sciences (LIPI) since 2005.

His research interests are computer vision, 3D medical imaging, visual inspection, and pattern recognition. He has been involved in some research projects related with digital image processing and pattern recognition for various applications. He has contributed to develop an imaging based technique for assessing psoriasis skin disease. The image analysis method was applied to quantify diseases severity based on several skin lesion properties. He has conducted an intensive collaboration research with dermatologists at Dermatology Department, Hospital Kuala Lumpur, Malaysia. The research project was conducted from 2008 to 2013 and have successfully recruited around 200 psoriasis patients. Since 2014, he has been involved in a collaborative project between LIPI and CERN, Switzerland. He contributed to develop visual inspection methods for assessing sensor chip qualities at production and detector construction stages. The detector will be used in ALICE (A Large Ion Collider Experiment) Project, one of the largest physic experiments in the world hosted by CERN. He has also successfully secured two years research grant from The Ministry of Research, Technology, and Higher Education, Republic of Indonesia for conducting research project on wood identification by using computer vision methods. The research is a collaborative project between LIPI and Forest Products Research and Development Center, Ministry of Environment and Forestry, Indonesia. He has published papers in journals, international conferences, book chapters, and patents.



## Didit Adytia, Ph.D

**School of Computing,  
Telkom University, Indonesia**



Dr. Didit Adytia obtained his Ph.D in Applied Mathematics, University of Twente, The Netherlands, in 2012, and was continued with a Post Doctoral position at the same university until 2016. His Bachelor and Master degree are in Mathematics, were obtained from Institut Teknologi Bandung (ITB), Indonesia, in 2006 and 2008, respectively. Since 2016, he is a lecturer and researcher at School of Computing,

Telkom University. His research interest includes mathematical modelling of water wave, computational fluid dynamics, numerical methods, high performance computing, metocean (meteorology and oceanography), and big data of climate.

Dr. Didit has more than 9 years in the area of mathematical modelling and simulation of water wave both in academic research as well as in industry. During his PhD and Post Doc, he is developing a mathematical model and software, called variational Boussinesq, for simulating water wave propagation. The software has been used for academic purposes as well as in Industry (coastal engineering). During his Post Doctoral position, he formed a startup company called NeXT Ocean Indonesia (NOCI) that provided a consulting services in the area of coastal and offshore engineering especially for oil and gas companies. NOCI advocates problem solved based on newest mathematical modelling and simulation. Since 2016, he joined School of Computing, Telkom University. He continue to develop wave models, numerical implementations, and softwares for simulating wave; from long wave such as Tsunami, short waves as wind generated wave, as well as wave/swell generated by Tropical Cyclone. Based on Industrial demand, he also work on a wave forecasting system, for simulating accurately wave forecasting in the area of South East Asia, especially Indonesia, that has complicated geometry. His present research is to perform and analyze climate simulation, in order to calculate extreme waves, wind, squall from long term simulation. This research is connected directly with the demand from Industry, i.e. coastal and offshore constructions.

**Speech Title: Water Wave: Modelling, Simulation & Big Data**



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Thursday, May 3

07:30-08:30	<b>Registration of Participants</b>														
08:30-08:45	<b>Opening Ceremony &amp; Chanting Prayers</b>														
08:45-09:00	<b>Welcoming Speech: ICOICT 2018 Chairpersons</b>														
09:00-09:15	<b>Opening Speech: Telkom University Rector</b>														
09:15-09:30	<b>Launching of ICOICT 2018</b>														
09:30-09:45	<b>Coffee Break</b>														
09:45-10:45	<b>Keynote Speech #1</b>														
10:45-11:00	<b>Photo Session</b>														
11:00-12:00	<b>Keynote Speech #2</b>														
12:00-12:55	<b>Lunch Break &amp; Midday Prayer</b>														
12:55-13:55	<b>Keynote Speech #3</b>														
14:00-15:15				<b>Parallel Session Track 1C: Connecting Societies</b>			<b>Parallel Session Track 1B: Connecting Machines</b>			<b>Parallel Session Track 1E: Connecting Data</b>			<b>Parallel Session Track 1F: Ambient Intelligence for Smart Living</b>		
15:15-15:30	<b>Coffee Break</b>														
15:40-16:55				<b>Parallel Session Track 2C: Connecting Societies</b>			<b>Parallel Session Track 2E: Connecting Data</b>			<b>Parallel Session Track 2F: Ambient Intelligence for Smart Living</b>					
18:30-20:30	<b>Gala Dinner</b>														

Friday, May 4

07:30-08:00	<b>Registration</b>											
08:00-09:15				<b>Parallel Session Track 1A: Connecting Sensors</b>			<b>Parallel Session Track 1D: Connect with Confidence</b>			<b>Parallel Session Track 1G: Connecting with Confidence</b>		
09:20-09:40	<b>Tutorial Session</b>											
09:40-11:15	<b>Speech #1</b>											
10:00-11:00				<b>Parallel Session Track 2D: Connect with Confidence</b>			<b>Parallel Session Track 2G: Connect with Confidence</b>			<b>Parallel Session Track 2H: Connect with Confidence</b>		
11:40-13:10	<b>Lunch Break &amp; Friday prayer</b>											
13:00-14:15												
14:50-15:10												



Saturday, May 5

07:30- **Registration of Participants**  
08:00-  
09:20-  
09:20- **Coffee Break**  
09:50- **Best Paper Award Announcement**  
10:40- **Closing Speech by ICoICT 2018 Chairman**  
11:00-  
11:45- **Lunch**

**Thursday, May 3, 07:30 - 08:30**

**Registration of Participants**  [TOP](#)

**Thursday, May 3, 08:30 - 08:45**

**Opening Ceremony & Chanting Prayers**  [TOP](#)

**Thursday, May 3, 08:45 - 09:00**

**Welcoming Speech: ICoICT 2018 Chairpersons**  [TOP](#)

**Thursday, May 3, 09:00 - 09:15**

**Opening Speech: Telkom University Rector**  [TOP](#)

**Thursday, May 3, 09:15 - 09:30**

**Launching of ICoICT 2019**  [TOP](#)

**Thursday, May 3, 09:30 - 09:45**

**Coffee Break**  [TOP](#)

**Thursday, May 3, 09:45 - 10:45**

**Keynote Speech #1**  [TOP](#)

Security and Privacy in the Internet of Things

The network of the future is envisioned as an effective, intelligent, adaptive, active and high-performance Internet that can enable applications ranging from smart cities to tsunami monitoring. The network of the future will be a network of billions or trillions of entities (devices, machines, things, vehicles) communicating seamlessly with one another and is rapidly gaining global attention from academia, industry, and government. The emergence of the Internet of Things (IoT) will see the physical world becoming one big intelligent information system with the ultimate goal of improving quality of life and empowering new business models. However, this also means that more personal information and business data will exist in the cloud and be passed back and forth through thousands of devices that possess decision making capabilities and may have exploitable vulnerabilities. One weak link in the security chain could be unlocked and lead to catastrophic consequences. So, the question is: What does such an IoT-driven future mean for the cybersecurity landscape? What does it mean for privacy? With an estimated 50 billion devices to be connected by 2020, the interconnected intelligent world is definitely coming; but the attack surface for hackers has also considerably increased. What does this mean for businesses and security experts? Topics covered in this talk will include: security and privacy properties in IoT systems; secure protocol design with a focus on machine to machine (M2M) communication; formal security analysis of IoT security protocols, open research problems and future research directions.

**Thursday, May 3, 10:45 - 11:00**

**Photo Session**  [TOP](#)

**Thursday, May 3, 11:00 - 12:00**

**Keynote Speech #2**  [TOP](#)

Improving the Quality of Life through Smart Sensing

Quality of life (QOL) concerns about the general well-being of individuals and societies. It observes life satisfaction in various aspects, including physical health, family relationship, wealth, the environment, and more. A country is said to have a better QOL index if the country can provide better opportunities for a healthy, safe and prosperous life in the years ahead. In this talk, we will review some of the state-of-the-art technologies used for the purpose of improving tomorrow's quality of life. Particularly, we will discuss on how smart sensing can help in protecting our environment, safeguarding our properties, increasing productivity for farmers, and connecting people to the love one.

**Thursday, May 3, 12:00 - 12:55**

**Lunch Break & Midday Prayer**  [TOP](#)

**Thursday, May 3, 12:55 - 13:55**

**Keynote Speech #3**  [TOP](#)

The Internet of Things (IoT) is predicted to contribute 11% to the global economy in 2025 according to some studies leading to the revolution of industry 4.0 for massive services. However, the problem of massive number of connections involving billions of devices are remaining unsolved in practice. In this talk, we try to solve the massive number of connection using the concept of coding theory combined with successive interference cancellation to maximize the success of multiple access mechanism. Due to the nature of huge number of connecting devices, we prefer random access scheme rather than scheduling, called coded random access (CRA). We found that the proposed CRA multiple access scheme provides highest throughput among the current IoT technologies. The IoT with pure ALOHA achieves 0.18 packet/slot; IoT with slotted ALOHA provides 0.37 packet/slot; IoT with non-slotted carrier sense multiple access with collision avoidance (CSMA/CA) achieves 0.5-0.8 packet/slots; IoT with slotted CSMA/CA reaches 0.8 packet/slot, while IoT with the proposed CRA scheme can achieve 0.9-3.7 packet/slot, which is about 20x compared to the IoT with pure ALOHA scheme. Due to the unpredictable number of future connecting devices, we derive a theoretical network capacity based on the extrinsic information transfer (EXIT) chart analysis to predict the rate and traffic expressing the number of connecting devices.

**Thursday, May 3, 15:15 - 15:30**

**Coffee Break**  TOP

**Thursday, May 3, 18:30 - 20:30**

**Gala Dinner**  TOP

**Friday, May 4, 07:30 - 08:00**

**Registration of Participants**  TOP

**Friday, May 4, 09:20 - 09:40**

**Coffee Break**  TOP

**Friday, May 4, 09:40 - 11:15**

**Tutorial Session Speech #1**  TOP

Big Data: Trends, Challenges & Opportunities

Every day, approximately 2.5 quintillion bytes of data are created. These data come from digital pictures, videos, posts to social media sites, intelligent sensors, purchase transaction records, cell phone GPS signals, to name a few. This is known as Big Data. There is no doubt that Big Data and especially what we do with it has the potential to become a driving force for innovation and value creation.

Innovations in technology and greater affordability of digital devices have presided over today's Age of Big Data, an umbrella term for the explosion in the quantity and diversity of high frequency digital data. These data hold the potential as yet largely untapped to allow decision makers to track development progress, improve social protection, and understand where existing policies and programmes require adjustment.

Turning Big Data—call logs, mobile-banking transactions, online user-generated content such as blog posts and Tweets, online searches, satellite images, etc. into actionable information requires using computational techniques to unveil trends and patterns within and between these extremely large socioeconomic datasets. New insights gleaned from such data mining should complement official statistics, survey data, and information generated by Early Warning Systems, adding depth and nuances on human behaviours and experiences and doing so in real time, thereby narrowing both information and time gaps. The promise of data-driven decision-making is now being recognized broadly, and there is growing enthusiasm for the notion of "Big Data." There is currently a wide gap between its potential and its realization.

Heterogeneity, scale, timeliness, complexity, and privacy problems with Big Data impede progress at all phases of the pipeline that can create value from data. A large amount of data today is not natively in structured format; for example, tweets and blogs are weakly structured pieces of text, while images and video are structured for storage and display, but not for semantic content and search. Transforming such content into a structured format for later analysis is a major challenge. The value of data explodes when it can be linked with other data, thus data integration is a major creator of value. Since most data is directly generated in digital format today, we have the opportunity and the challenge both to influence the creation to facilitate later linkage and to automatically link previously created data. Data analysis, organization, retrieval, and modeling are other foundational challenges. Data analysis is a clear bottleneck in many applications, both due to lack of scalability of the underlying algorithms and due to the complexity of the data that needs to be analyzed. Finally, presentation of the results and its interpretation by non-technical domain experts is crucial to extracting actionable knowledge.

The many novel challenges and opportunities associated with Big Data necessitate rethinking many aspects of these data management platforms, while retaining other desirable aspects. It should be pointed out that the appropriate investment in Big Data will lead to a new wave of fundamental technological advances that will be embodied in the next generations of Big Data management and analysis platforms, products, and systems. Thus, we should believe that these research problems are not only timely, but also have the potential to create huge economic value in the world economy for years to come. However, they are also hard, requiring us to rethink data analysis systems in fundamental ways. A major investment in Big Data, properly directed, can result not only in major scientific advances, but also lay the foundation for the next generation of advances in science, medicine, and business.

**Friday, May 4, 11:40 - 13:10**

**Lunch Break & Friday prayer**  TOP

**Friday, May 4, 14:50 - 15:10**

**Coffee Break**  TOP

**Saturday, May 5, 07:30 - 08:00**

**Registration of Participants**  TOP

**Saturday, May 5, 08:00 - 09:20**

**Tutorial Session Speech #2**  TOP

Development of Vision-based Algorithms for Inspecting Chip Quality

A large hadron collider is operated by CERN (the European Organization for Nuclear Research) to conduct a large scale and a long term particle physics experiment, namely ALICE (A Large Ion Collider Experiment). Thousand of sensor chips are used in the collider sensor system to track the particle trajectories. Vision-based algorithms are proposed to assess the quality of sensor chips. The chip quality is defined by measuring several physical parameters. The parameters include the edge thickness of pad surface, edge cutting integrity, surface defects, and chip alignment. The 3D imaging algorithm has been developed to measure the edge thickness of pad surface. A 3D scanner based on structure light projection method is used to scan the chip surfaces. Edge cutting integrity is observed to ensure there is no crack path along the cutting profile of the chip. The surface defects is also examined to find damage region on the pad surface. Subsequent step of the production stage is also presented in this talk. The step is known as chip alignment. In this step, sensor chip position should be adjusted to fit with circuit board of the sensor. The algorithms have been tested by using chip images at microscopic level. The experiment results show that the vision-based algorithm can provide consistent measurement for the observed quality parameters.

**Tutorial Session Speech #3**  TOP

Water Wave: Modelling, Simulation & Big Data

We live on islands that are surrounded by sea and ocean. Understanding sea and ocean behaviour become significantly important when people are transporting goods using ships, taking and transporting oil and gas from offshore, as well as for coastline protection both from sea level rise as well as from extreme conditions. Sea behaviour can be understood from mathematical modelling point of view, i.e. water wave phenomenon. It is a complicated physical process; wind wave generation process, wave propagation, dispersion, nonlinearity, shoaling, diffraction, refraction, reflection, etc. For coastal and offshore engineering design, wave behaviour in the future should be predicted accurately by hindcasting (analyzing wave behaviour in the past). To that end, accurate and efficient (time computing) wave simulations should be produced. For predicting extreme wave that is possible to

occur once in a 100 years (100 year return period), historical wind data of at least 30 years is needed for extreme value analysis. For longer return period, longer historical wind and wave data are needed. This may lead to a new challenge, big data of historical climate data (specifically wind and wave). In this talk, we present briefly about modelling process of water wave, numerical implementations, computing process, and extreme value analysis, that are put in a perspective of scientific work as well as real applications in industry.

**Saturday, May 5, 09:20 - 09:50**

 **Coffee Break** 

**Saturday, May 5, 09:50 - 10:40**

 **Best Paper Award Announcement** 

**Saturday, May 5, 10:40 - 11:00**

 **Closing Speech by ICoICT 2018 Chairman** 

**Saturday, May 5, 11:00 - 11:45**

 **Lunch** 

**Thursday, May 3, 14:00 - 15:15**

 **Parallel Session Track 1B: Connecting Machines** 

***Toward Full Enterprise Software Support on nDPI***

Gregorius Radityatama (Swiss German University, Indonesia); Charles Lim (Swiss German University & Universitas Indonesia, Indonesia); Heru Ipung (Swiss German University, Indonesia)  
pp. 1-6

***Utilization of Onboard Diagnostic II (OBD-II) on Four Wheel Vehicles for Car Data Recorder Prototype***

Satrio Nugroho and Endro Ariyanto (Telkom University, Indonesia); Andrian Rakhmatsyah (School of Computing - Telkom University, Indonesia)  
pp. 7-11

***Collision-Aware Rate Adaptation Algorithm for High-Throughput IEEE 802.11n WLANs***

Fajari Setia, Teuku Yulliar Arif and Rizal Munadi (Syiah Kuala University, Indonesia)  
pp. 12-17

***An Architecture for M2M Communications over Cellular Networks Using Clustering and Hybrid TDMA-NOMA***

Md. Farhad Hossain (Bangladesh University of Engineering and Technology (BUET), Bangladesh); Anthonya Rozario (BRAC University, Bangladesh)  
pp. 18-23

***Implementation of Vehicle Traffic Analysis Using Background Subtraction in The Internet of Things (IoT) Architecture***

Aghus Sofwan, Fuad Surur, M Arfan, Eko Handoyo, Yosua Alvin A. S., Maman Somantri and Enda Sinuraya (Diponegoro University, Indonesia)  
pp. 24-27

 **Parallel Session Track 1C: Connecting Societies** 

***An Evaluation of E-Readiness Cloud Computing Service Model Adoption On Indonesian Higher Education***

Soni Fajar Surya Gumilang and Heru Nugroho (Telkom University, Indonesia)  
pp. 28-33

***Throughput Maximization Based On User Association In Heterogeneous Networks***

Khalid Mohamed and Mohamad Yusoff Alias (Multimedia University, Malaysia); Mardeni Roslee (MMU, Malaysia); Mohammed Jaber Alam (Multimedia University, Malaysia)  
pp. 34-37

***Rejuvenation Action Model for Application Software***

Jamaiah Yahaya (The National University of Malaysia & Faculty of Information Science and Technology, Malaysia); Zaiha Nadiyah Zainal Abidin (Faculty of Information Science and Technology, UKM, Malaysia); Zuriani Hayati Abdullah (Universiti Kebangsaan Malaysia, Malaysia); Aziz Deraman (University Malaysia Terengganu, Malaysia)  
pp. 38-43

***Artificial Neural Network for Predicting Indonesia Stock Exchange Composite Using Macroeconomic Variables***

Andry Alamsyah (Telkom University & School of Economics and Business, Indonesia); Asri Nurfathi (Telkom University, Indonesia)  
pp. 44-48

***Usability Evaluation of Digital Service Company Portal Using Importance Performance Analysis***

Yati Rohayati, Sari Wulandari and Kartika Sari (Telkom University, Indonesia)  
pp. 49-54

 **Parallel Session Track 1E: Connecting Data** 

***Analysis of Non Negative Double Singular Value Decomposition Initialization Method on Eigenspace-based Fuzzy C-Means Algorithm For Indonesian Online News Topic Detection***

Raden Sutrisman and Hendri Murfi (Universitas Indonesia, Indonesia)  
pp. 55-60

***TCP Congestion Window Analysis of Twitter with Exponential Model***

Hilal H. Nuha (King Fahd University of Petroleum & Minerals & CeGP, Saudi Arabia); Sidik Prabowo (Telkom University & Telkom University, Indonesia)  
pp. 61-65

***Hadoop High Availability with Linux HA***

Diamun Solissa (Telkom Institute of Technology, Indonesia); Maman Abdurrohman (Telkom University, Indonesia)  
pp. 66-69

***Recommendation System Based on Item and User Similarity on Restaurants Directory Online***

Aji Mustofa (Universitas Indonesia, Indonesia); Indra Budi (Computer Science, Indonesia)  
pp. 70-74

***Computational Analysis on Rise and Fall of Indonesian Vocabulary***

Faisal Rahutomo, Rosa Asmara and Deddy Aji (State Polytechnic of Malang, Indonesia)  
pp. 75-80

 **Parallel Session Track 1F: Ambient Intelligence for Smart Living** 



**Simulation of Rotating a Robot Arm by Non-Metamorphic Animation Method in IFS Fractal Model Based on Shifting Centroid Technique**

Tedjo Darmanto (STMIK AMIK Bandung, Indonesia)  
pp. 81-85

**A Multi-Level Genetic Algorithm Approach for Generating Efficient Travel Plans**

Fajar Hendra and Zk Abdurahman Baizal (Telkom University, Indonesia); Kemas Lhaksmana (Telkom University & Kyoto University, Indonesia)  
pp. 86-91

**SocioEmpathy: A Social-Sensitivity Application to Reduce Stress and Depression of Divorce or Domestic Violence Victims**

Arga Putra Panatagama (Bogor Agricultural University, Indonesia); Guntur Pratama (Bogor Agricultural University, Bogor, Indonesia); Dwi Wibawa (Bogor Agricultural University, Indonesia)  
pp. 92-97

**Analyzing 4G Adoption in Indonesia Using a Modified Unified Theory of Acceptance and Use of Technology 2**

Indrawati Indrawati and Kedar Utama (Telkom University, Indonesia)  
pp. 98-102

**A Multi-label Classification on Topics of Quranic Verses in English Translation Using Tree Augmented Naïve Bayes**

Al Mira Khonsa Izzaty, Mohamad Syahrul Mubarak, Nanang Saiful Huda and A Adiwijaya (Telkom University, Indonesia)  
pp. 103-106

Thursday, May 3, 15:40 - 16:55

Parallel Session Track 2C: Connecting Societies



**Travel Route Optimization Using Dynamic Programming**

Yoe One Ariestya Niovitta (ITS Surabaya, Indonesia); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember, Indonesia)  
pp. 107-112

**Route Recommendation using Community Detection Algorithm (Case: Kota Bandung)**

Yahya Peranginangin, Andrias Andi and Kristina Sisilia (Telkom University, Indonesia)  
pp. 113-118

**Improving Node Popularity Calculation using Kalman Filter in Opportunistic Mobile Social Networks**

Bambang Soelistijanto (Sanata Dharma University, Indonesia)  
pp. 119-124

**Increasing Students Interaction in Distance Education using Gamification Case Study: IDEA Telkom University**

Anisa Herdiani, M. Rizky Ferianda and Indra Lukmana Sardi (Telkom University, Indonesia)  
pp. 125-129

**The Effectiveness of Low-Level Structure-based Approach Toward Source Code Plagiarism Level Taxonomy**

Oscar Karnalim and Setia Budi (Maranatha Christian University, Indonesia)  
pp. 130-134

Parallel Session Track 2E: Connecting Data



**Link Failure Emulation with Dijkstra and Bellman-Ford Algorithm in Software Defined Network Architecture (Case Study: Telkom University Topology)**

Anggie Nastiti (Telkom University, Indonesia); Andrian Rakhmatsyah (School of Computing - Telkom University, Indonesia); Muhammad Arief Nugroho (Telkom University, Indonesia)  
pp. 135-140

**Finding Pattern in Dynamic Network Analysis**

Andry Alamsyah (Telkom University & School of Economics and Business, Indonesia); Kevin Bratawisnu, Made and Puput Sanjani (Telkom University, Indonesia)  
pp. 141-146

**A Lightweight Semantic-based Medical Document Retrieval**

Dhomas Hatta Fudholi and Lalu Mutawalli (Universitas Islam Indonesia, Indonesia)  
pp. 147-151

**Context-aware ontological hybrid recommender system for IPTV**

Mohammad Wahiduzzaman Khan (Multimedia University, Cyberjaya, Malaysia); Chan Gaik Yee (MMU, Malaysia); Fang-Fang Chua (Multimedia University, Malaysia); Su-Cheng Haw (MMU, Malaysia); Muhsin Hassan and Fatimah Saaid (Telekom Malaysia, Malaysia)  
pp. 152-157

**Tokenization and N-gram for Indexing Indonesian Translation of the Quran**

Syopiansyah Jaya Putra (Syarif Hidayatullah State Islamic University Jakarta, Indonesia); Muhamad Gunawan (Islamic State University Syarif Hidayatullah, Indonesia)  
pp. 158-161

Parallel Session Track 2F: Ambient Intelligence for Smart Living



**News Topic Classification using Mutual Information and Bayesian Network**

Fahmi Salman Nurfikri, Mohamad Syahrul Mubarak and A Adiwijaya (Telkom University, Indonesia)  
pp. 162-166

**Analyzing Factors Influencing Continuance Intention of E-Payment Adoption Using Modified UTAUT 2 Model (A Case Study of Go-Pay from Indonesia)**

Indrawati Indrawati and Dianty Putri (Telkom University, Indonesia)  
pp. 167-173

**High Performance Streaming Based on H264 and Real Time Messaging Protocol (RTMP)**

Anif Nurrohman and Maman Abdurohman (Telkom University, Indonesia)  
pp. 174-177

**An Android Application for Predicting Traffic Congestion using Polling Method**

Nuzulul Perdana Putra (Telkom University, Indonesia); Kemas Lhaksmana (Telkom University & Kyoto University, Indonesia); Bambang Wahyudi (Telkom University, Indonesia)  
pp. 178-183

**Design and Implementation of Water Heater Activation and Monitoring of Water Temperature and Water Supply with Ultrasonic and Temperature Sensor Using Arduino Based on Android**

Muhammad Khairunnas and Endro Ariyanto (Telkom University, Indonesia); Sidiq Prabowo (Telkom University & Telkom University, Indonesia)  
pp. 184-188

Friday, May 4, 08:00 - 09:15

Parallel Session Track 1A: Connecting Sensors



**2.4 GHz Wireless Data Acquisition System for FIToplankton ROV**

Muhammad Ikhsan Sani and Simon Siregar (Telkom University, Indonesia); Marlindia Sari (Telkom University, Indonesia); Lisa Mardiana (Telkom University, Indonesia)  
pp. 189-193

**Person Locator Using GPS Module and GSM Shield Applied for Children Protection**

Fahmi Fahmi, Baihaqi Siregar, Sylvi Evelyn, Dani Gunawan and Ulfi Andayani (University of Sumatera Utara, Indonesia)  
pp. 194-198

**Android Application For Controlling Air Conditioner using Fuzzy Logic**  
Andhika Cahya Pratama and Riyanarto Sarno (Institut Teknologi Sepuluh Nopember, Indonesia)  
pp. 199-204

**Connectivity Control Algorithm for Autonomous Wireless Agents**  
Syifa Hersista (The Sirindhorn International Thai-German Graduate School of Engineering, KMUTNB, Thailand & RWTH Aachen University, Germany)  
pp. 205-210

**A Capacitive Model of Water Salinity Wireless Sensor System Based on WIFI-Microcontroller**  
Suryono Suryono, Sr., Widowati Widowati, Sapto Putro and Sunarno Sunarno (Diponegoro University, Indonesia)  
pp. 211-215



#### Parallel Session Track 2B: Connecting Machines

**Development of Qibla Direction Cane for Blind using Interactive Voice Command**  
Gita Hapsari and Giva Mutiara (Telkom University, Indonesia); Asrin Asmianti (Telkom University & Applied Science School of Telkom University, Indonesia)  
pp. 216-221

**Equal-Cost Multipath Routing in Data Center Network Based on Software Defined Network**  
Fiqih Rhamdani, Novian Anggis Suwastika and Muhammad Arief Nugroho (Telkom University, Indonesia)  
pp. 222-226

**A framework of wireless maintenance system monitoring(A case study of automatic filling machine at SB company)**  
Fransiskus Tatas Dwi Atmaji (Telkom University, Bandung-Indonesia, Indonesia); Judi Alhilman (Telkom University, Indonesia)  
pp. 227-232

**Automation Canal Intake Control System Using Fuzzy Logic and Internet of Things (IoT)**  
Radityo Putro Wibisono and Novian Anggis Suwastika (Telkom University, Indonesia); Sidik Prabowo (Telkom University & Telkom University, Indonesia); Tri Santoso (Estetika Multikreasi Rancana, Indonesia)  
pp. 233-238

**Fast UART and SPI Protocol for Scalable IoT Platform**  
Rizka Reza Pahlevi, Aji Gautama Putrada Satwiko and Maman Abdurrohman (Telkom University, Indonesia)  
pp. 239-244



#### Parallel Session Track 3C: Connecting Societies

**Verifying Vaccine Supply Chain System in Indonesia Using Linear-Time Temporal Logic**  
Muhammad Wikatama (Telkom University, Indonesia); Muhammad Arzaki (Telkom University & Computing Lab - ICM Research Group, Indonesia); Yanti Rusmawati (Telkom University, Indonesia)  
pp. 245-253

**Dynamic Large Scale Data on Twitter using Sentiment Analysis and Topic Modelling Case Study Uber**  
Andry Alamsyah (Telkom University & School of Economics and Business, Indonesia); Wirawan Rizkika, Ditya Nugroho and Farhan Renaldi (Telkom University, Indonesia); Siti Sa'adah (Telkom University d/h Telkom Institute of Technology, Indonesia)  
pp. 254-258

**Detecting Indonesian Spammer on Twitter**  
Erwin B. Setiawan (Telkom University, Indonesia); Dwi H Widyantoro (Institut Teknologi Bandung, Indonesia); Kridanto Surendro (Institut Teknologi Bandung, Indonesia)  
pp. 259-263

**Quranic Concepts Similarity Based on Lexical Database**  
Dony Arisandy Wiranata, Moch Arif Bijaksana and Mohamad Syahrul Mubarak (Telkom University, Indonesia)  
pp. 264-268

**Searching Quran Chapters Verses Weight with TF and Pareto Principle to Support Memorizing (Case Study Juz Amma)**  
Eko Darwiyanto and Moch Arif Bijaksana (Telkom University, Indonesia)  
pp. 269-273



#### Parallel Session Track 1D: Connect with Confidence

**Strengthening Megrelishvili Protocol Against Man-in-The-Middle Attack**  
Muhammad Arzaki (Telkom University & Computing Lab - ICM Research Group, Indonesia)  
pp. 274-280

**Analysis and Classification of Danger Level in Android Applications using Naive Bayes Algorithm**  
Ridho Alif Utama, Parman Sukarno and Erwid M Jadied (Telkom University, Indonesia)  
pp. 281-285

**QIM-based Audio Watermarking with Combined Techniques of SWT-DST-QR-CPT Using SS-based Synchronization**  
Gelar Budiman (Telkom University, Indonesia); Andriyan B. Suksmono (Bandung Institute of Technology, Indonesia); Donny Danudirjo (ITB, Indonesia); Syarahbil Pawellang (Telkom University, Indonesia)  
pp. 286-292

**Counterexample Generation for Ping-Pong Protocols Security Checking Algorithm**  
Erwin Eko Wahyudi and Reza Pulungan (Universitas Gadjah Mada, Indonesia)  
pp. 293-298

**Design and Implementation Adaptive Intrusion Prevention System (IPS) for Attack Prevention in Software-Defined Network (SDN) Architecture**  
Novian Anggis Suwastika, Rifqi Pratama and Muhammad Arief Nugroho (Telkom University, Indonesia)  
pp. 299-304



#### Parallel Session Track 3E: Connecting Data

**Mining Customer Opinion for Topic Modeling Purpose: Case Study of Ride-Hailing Service Provider**  
Reggia Wayasti, Isti Surjandari and Zulkarnain (Universitas Indonesia, Indonesia)  
pp. 305-309

**Indexing Voronoi Cells for Highest Order VoronoiDiagram using R-Tree**  
Kiki Maulana Adhinugraha and Ibnu Asror (Telkom University, Indonesia)  
pp. 310-314

**Development of e-Kanban Application Using Stock-Needs Rule Prioritizing Policy to Reduce 0-Pick for Pharmaceutical Warehousing**  
Raihan Razafuad, Ari Yanuar Ridwan and Budi Santosa (Telkom University, Indonesia)  
pp. 315-323

**Study of Wavelet and Line Search Techniques on Modified Backpropagation Polak-Ribiere Algorithm for Heart Failure Detection**  
Dinda Destiani, A Adiwijaya and D Utama (Telkom University, Indonesia)  
pp. 324-328

**Rainfall Forecasting in Bandung Regency using C4.5 Algorithm**

Friday, May 4, 08:00 - 09:00

Parallel Session Track 3F: Ambient Intelligence for Smart Living



**Mongoloid and non-Mongoloid Race Classification From Face Image using Local Binary Pattern Feature Extractions**

Hafidh Rasyid (Telkom University, Indonesia); Kurniawan Nur Ramadhani (Universitas Telkom, Indonesia); Febryanti Sthevanie (Telkom University, Indonesia)  
pp. 334-337

**Distributed Campus Bike Sharing System Based On Internet Of Things (IoT)**

Fauzan Adhi Rachman, Maman Abdurohman and Aji Gautama Putrada Satwiko (Telkom University, Indonesia)  
pp. 338-341

**Mapping Walls of Indoor Environment using Moving RGB-D Sensor**

Ismail Rusli (Telkom University, Indonesia); Bambang Trilaksono (Bandung Institute of Technology, Indonesia); Widyawardana Adiprawita (Institut Teknologi Bandung, Indonesia)  
pp. 342-347

**Fatigue Monitoring based on Yawning and Head Movement**

Kirbana Jai Raman (Multimedia University (MMU), Malaysia)  
pp. 348-352

Friday, May 4, 09:40 - 10:55

Parallel Session Track 3B: Connecting Machines



**Enterprise Architecture for The Sensing Enterprise: A Research Framework**

Erda Guslinar Perdana (Telkom University, Indonesia); Husni Sastramihardja (Universitas Esa Unggul, Indonesia); Iping Supriana Suwardi (Bandung Institute of Technology, Indonesia)  
pp. 353-358

**Modeling User Interface of First-Aid Application Game using User Centered Design (UCD) Method**

Ervira Wulandari, Veronikha Effendy and Gede Wisudiawan (Telkom University, Indonesia)  
pp. 359-364

**Design and Implementation Cyber-Physical System on Plant Chemical Process: Study Case Mini Batch Distillation Column**

Irvan Budiawan (Bandung Institute of Technology, Indonesia); Arief Syaichu-Rohman (Institut Teknologi Bandung, Indonesia); Egi Hidayat and Pranoto Rusmin (Bandung Institute of Technology, Indonesia)  
pp. 365-370

**Indonesian License Plate Recognition Using Convolutional Neural Network**

Ignatius Notonogoro and Jondri Jondri (Telkom University, Indonesia); Anditya Arifianto (Telkom University & Artificial Intelligence Laboratory, ICM Research Group, Indonesia)  
pp. 371-374

**Decision System for Reservoir Upwelling using Fuzzy Logic based on Internet of Things**

Bayu Erfianto (TELKOM University & School of Computing, Indonesia); Novian Anggis Suwastika (Telkom University, Indonesia); Sidik Prabowo (Telkom University & Telkom University, Indonesia)  
pp. 375-380

Parallel Session Track 4C: Connecting Societies



**A Preliminary Study on Detection System for Assessing Children and Foster Parents Suitability**

Rachmadita Andreswari, Warih Puspitasari and Irfan Darmawan (Telkom University, Indonesia)  
pp. 381-384

**Grouping of Provinces in Indonesia According to Digital Divide Index**

Nori Wilantika, Dana Indra Sensuse, Septian Wibisono, Pamuji Putro and Aslon Damanik (University of Indonesia, Indonesia)  
pp. 385-393

**Automatic Tweet Classification based on News Category in Indonesian Language**

Jaka Eka Sembodo, Erwin B. Setiawan, Moch Arif Bijaksana and Erwin Budi Setiawan (Telkom University, Indonesia)  
pp. 394-398

**Analysis of the Technology Acceptance Model (TAM) on Survey SystemBased Smartphone by the National Population and Family Planning Indonesia**

Sukarno Sono (National Population and Family Planning Board, Indonesia); Nur Laila Meilani (Universitas Riau, Indonesia); Titut Prihyugiarto (National Population and Family Planning Board, Indonesia); Yuli Karyanti (Universitas Gunadarma, Indonesia)  
pp. 399-406

**Gamification for Learning Basic Algorithm**

Yadhi Aditya Permana (Telkom University & Politeknik Negeri Bandung, Indonesia); Dana Kusumo and Dade Nurjanah (Telkom University, Indonesia)  
pp. 407-413

Parallel Session Track 2D: Connect with Confidence



**An SSH HoneyPot Architecture Using Port Knocking and Intrusion Detection System**

Ridho Maulana Arifianto, Parman Sukarno and Erwid M Jaded (Telkom University, Indonesia)  
pp. 414-420

**On Generalized Divide and Conquer Approach for Group Key Distribution: Correctness and Complexity**

Ridhwan Dewoprabowo (Telkom University, Indonesia); Muhammad Arzaki (Telkom University & Computing Lab - ICM Research Group, Indonesia); Yanti Rusmawati (Telkom University, Indonesia)  
pp. 421-429

**Security Protection Profile on Smart Card System Using ISO 15408 Case Study: Indonesia Health Insurance Agency**

Yoso Setyoko and Rahmat Yasirandi (Telkom University, Indonesia)  
pp. 430-433

**Hardening the Virtual Password Authentication Scheme**

Mohammad Zakie Faiz Rahiemy, Parman Sukarno and Erwid M Jaded (Telkom University, Indonesia)  
pp. 434-439

**Digital Contract Using Block Chaining and Elliptic Curve Based Digital Signature**

Ari Moesriami Barmawi (Telkom University, Indonesia); Ari Moesriami Barmawi (Institut Teknologi Telkom, Indonesia); Sony Kalamasyah (Telkom University, Indonesia); Muhammad Arzaki (Telkom University & Computing Lab - ICM Research Group, Indonesia)  
pp. 440-445

Friday, May 4, 09:40 - 11:10



Parallel Session Track 4E: Connecting Data



**Mining Web Log Data For Personalized Recommendation System**

Asma Rosyidah, Isti Surjandari and Zulkarnain Zulkarnain (Universitas Indonesia, Indonesia)  
pp. 446-451

**Empowering Wearable Sensor Generated Data to Predict Changes in Individual's Sleep Quality**

Wahyu Hidayat, Toufan Tambunan and Reza Budiawan (Telkom University, Indonesia)  
pp. 452-457

**The Spreading Prediction of Dengue Hemorrhagic Fever (DHF) In Bandung Regency Using K-Means Clustering and Support Vector Machine Algorithm**

Mufli Muzakki and Fhira Nhita (Telkom University, Indonesia)  
pp. 458-463

**Increasing SDN Network Performance using Load Balancing Scheme on Web Server**

I Putu Suwandika (School of Computing, Telkom University, Indonesia); Muhammad Arief Nugroho and Maman Abdurrohman (Telkom University, Indonesia)  
pp. 464-468

**Social Network Performance Analysis and Content Engagement on Indonesia's E-Commerce Case Studies Tokopedia and Bukalapak**

Andry Alamsyah (Telkom University & School of Economics and Business, Indonesia); Affrilia Utami (Telkom University, Indonesia)  
pp. 469-474

**Endorsement Recommendation using Instagram Follower Profiling**

Anditya Arifianto (Telkom University & Artificial Intelligence Laboratory, ICM Research Group, Indonesia); Qhansa Bayu, Mahmud Dwi Sulistiyo, Ignatius Notonogoro, Naufal Anwari, Muhammad Adhi Satria, Ni Darmayanti, Admining Hastuti, Isma Dewi Liana, Pima Safitri and Rachmi Azanisa Putri (Telkom University, Indonesia)  
pp. 475-480

Friday, May 4, 10:00 - 11:00

Parallel Session Track 4F: Ambient Intelligence for Smart Living



**Enhancing Online Classroom towards Personalized Learning Environment**

Dawam Dwi Jatmiko Suwawi, Kusuma Ayu Laksitowening and Irwinda Putri (Telkom University, Indonesia)  
pp. 481-485

**A Multi-label Classification on Topics of Quranic Verses in English Translation using Multinomial Naive Bayes**

Reynaldi Pane, Mohamad Syahrul Mubarak, Nanang Saiful Huda and A Adiwijaya (Telkom University, Indonesia)  
pp. 486-489

**Visual Based Fire Detection System using Speeded Up Robust Feature and Support Vector Machine**

Laela Citra Asih (Universitas Telkom, Indonesia); Febryanti Sthevanie (Telkom University, Indonesia); Kurniawan Nur Ramadhani (Universitas Telkom, Indonesia)  
pp. 490-493

**Development of Low-Cost Autonomous Surface Vehicles (ASV) for Watershed Quality Monitoring**

Khafidurrohman Agustianto (Gadjah Mada University, Indonesia)  
pp. 494-499

Friday, May 4, 13:00 - 14:15

Parallel Session Track 5E: Connecting Data



**Visiting Time Prediction Using Machine Learning Regression Algorithm**

Indri Hapsari (Universitas Indonesia & Universitas Surabaya, Indonesia); Isti Surjandari and Komarudin Komarudin (Universitas Indonesia, Indonesia)  
pp. 500-505

**Detection of Atrial Fibrillation Disease Based on Electrocardiogram Signal Classification Using RR Interval and K-Nearest Neighbor**

Kartika Findra Resiandi, A Adiwijaya and D Utama (Telkom University, Indonesia)  
pp. 506-511

**Ontology Modelling Approach for Personality Measurement based on Social Media Activity**

Andry Alamsyah (Telkom University & School of Economics and Business, Indonesia); Muhammad Rizqy Dwi Putra and Darin Fadhilah (Telkom University, Indonesia); Fivi Nurwianti (Universitas Indonesia, Indonesia); Ening Ningsih (Universitas Islam Negeri Sunan Gunung Djati, Indonesia)  
pp. 512-518

**Sentiment Detection of Comment Titles in Booking.com Using Probabilistic Latent Semantic Analysis**

Dewi Ayu Khusnul Khotimah and Riyanarto Sarno (Institut Teknologi Sepuluh Nopember, Indonesia)  
pp. 519-524

**Kernelization of Eigenspace-Based Fuzzy C-Means for Topic Detection on Indonesian News**

Mukti Ari and Hendri Murfi (Universitas Indonesia, Indonesia)  
pp. 525-530

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This is to certify that

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has participated as a

**PRESENTER**

**“Implementation of Vehicle Traffic Analysis Using Background Subtraction  
in The Internet of Things (IoT) Architecture”**

in the

**6<sup>th</sup> International Conference On Information And Communication Technology (ICoICT 2018)**

Theme:

**“Connecting Sensors, Machines and Societies”**



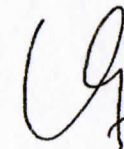
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**Bandung, 3 - 5 May 2018**



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**Parman Sukarno, Ph.D**  
General Chair of ICoICT 2018  
TelkomUniversity



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**Assoc. Prof. Dr. Ong Thian Song**  
General Co-Chair of ICoICT 2018  
Multimedia University