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

Judul Karya Ilmiah : Filtering for Data Acquisition on Wireless Sensor Network
 Jumlah Penulis : 3 orang
 Status Pengusul : Penulis Pertama
 Identitas Prosiding : a. Judul Prosiding : 5th International Conference on Information Technology, Computer, and Electrical Engineering (ICITACEE) 2018
 b. ISBN/ISSN : ISBN : 978-1-5386-5529-0, Hal : 180 - 184
 c. Thn Terbit, Tempat Pelaks. : Semarang, 26 - 27 September 2018
 d. Penerbit/Organiser : Proceeding ICITACEE 2018 Terindeks Scopus
 e. Alamat Repository/Web : Url artikel : DOI: 10.1109/ICITACEE.2018.8576940
 Alamat Artikel :
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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		2,25
b. Ruang lingkup dan kedalaman pembahasan (30%)	7,50		7,25
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	7,50		7,25
d. Kelengkapan unsur dan kualitas terbitan/prosiding(30%)	7,50		7,25
Total = (100%)	25,00		24
$0,4 \times 24,125 / 2 = 4,825$			

Catatan Penilaian Paper oleh Reviewer :

- Kesesuaian dan kelengkapan unsur isi paper:** 165 sebuah paper telah tersedia dan sinkron, antara judul, abstrak sampai kesimpulan semua.
- Ruang lingkup dan kedalaman pembahasan:** paper ini membahas materi tentang filtering. pembahasan sgdh relatif fokus dan mendalam.
- Kecukupan dan kemutakhiran data/informasi dan metodologi:** metodologi yang digunakan dan paper ini sgdh terstruktur dan berbobot dan sudah dipublikasi.
- Kelengkapan unsur dan kualitas terbitan:** terbitan prosiding secara umum memiliki kualitas yang baik & lengkap. unsur-unsur judul, prosiding, daftar isi, & panaha tersedia secara lengkap.

Semarang,
Reviewer 1


 Dr. Iwan Setiawan, ST, MT
 NIP. 197309262000121001
 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		7,25
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	7,50		7,25
d. Kelengkapan unsur dan kualitas terbitan/prosiding(30%)	7,50		7,25
Total = (100%)	25,00		24,25
$0,4 \times 24,125 / 2 = 4,825$			

Catatan Penilaian Paper oleh Reviewer :

- a) Kesesuaian dan kelengkapan unsur isi paper: judul, metode, pembahasan, kesimpulan dan saran. review sudah terakumulasi
- b) Ruang lingkup dan kedalaman pembahasan: ruang lingkup pembahasan mengenai pengaruh filter up-down abstraktor dan kualitas. kegunaan dan filter calyx sudah
- c) Kecukupan dan kemutakhiran data/informasi dan metodologi: referensi dan metode yg digunakan sudah tidak dipake. kemutakhiran data diteliti dg referensi yg. keraguan dari referensi
- d) Kelengkapan unsur dan kualitas terbitan: terbitan telah dari 5 terbitan terbitan calyx. metode analisis is. semua nilai terbitan terbitan scopus; harga beberapa gambar tidak bisa dilihat dengan baik - Semarang, Reviewer 2
- lar (gb. 3 sd 7).


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

**LEMBAR
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Hasil Penilaian *Peer Review* :


Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
	Reviewer I	Reviewer II	
a. Kelengkapan unsur isi prosiding (10%)	2,25	2,5	2,38
b. Ruang lingkup dan kedalaman pembahasan (30%)	7,95	7,25	7,25
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	7,25	7,25	7,25
d. Kelengkapan unsur dan kualitas terbitan/prosiding(30%)	7,95	7,25	7,25
Total = (100%)	24	24,25	24,125

Semarang,

Reviewer 2

Reviewer 1

Dr. Wahyudi, S.T., M.T.
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13 December 2018, Article number 8576940, Pages 180-184
5th International Conference on Information Technology, Computer and Electrical Engineering, ICITACEE 2018; Semarang; Indonesia; 26 September 2018 through 28 September 2018; Category numberCFP1889Z-PRT; Code 143726

Filtering for Data Acquisition on Wireless Sensor Network (Conference Paper)

Sofwan, A. ✉, Sumardi ✉, Ulwiyati, N. ✉

Department of Electrical Engineering, Diponegoro University, Semarang, Indonesia

Abstract

View references (12)

The main source of data sensor is measurement that performed on a physical phenomenon or phenomenon that has been modeled. The obtained data from the sensor measurement may yield errors during measurement. The error may be caused by noise that is coming from the environment where the sensor is installed. The filtering process for the less accurate sensor readings is needed. In this research, two types filtering processes of sensors are used for the sensor node of early detection for landslide disaster in an IoT-based wireless sensor network system. The sensors are an IMU sensor MPU6050 and FC-28 for the moisture sensor. The obtained angular data from the MPU6050 sensor is the result of combining data from accelerometer and gyroscope sensors using complementary filter method. As for the FC-28 humidity sensor uses the R-C low pass filter to get a more accurate reading of soil moisture. The obtained data of sensor with filter indicates the more stable reading results. © 2018 IEEE.

SciVal Topic Prominence ⓘ

Topic: Units of measurement | Sensors | orientation estimation

Prominence percentile: 95.745 ⓘ

Author keywords

complementary filter filter RC low pass filter sensor

Indexed keywords

Engineering controlled terms: Data acquisition Low pass filters Sensor nodes Sensors Soil moisture

Engineering uncontrolled terms: Complementary filters filter Filtering process Gyroscope sensors Moisture sensors
Physical phenomena Sensor measurements Sensor readings

Engineering main heading: Moisture control

Funding details

Funding text

ACKNOWLEDGMENT This work was supported by Superior Research of Higher Education (Penelitian Unggulan Perguruan Tinggi - PUPT) Diponegoro University grant in the fiscal year 2018.

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ICITACEE 2017

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Semarang, October 18 - 19, 2017



DEPARTMENT OF COMPUTER ENGINEERING
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The 2017 4th International Conference on Information Technology, Computer and Electrical Engineering (ICITACEE)

The Wujil Resort & Conventions

October 18, 2017 – October 19, 2017

The 2017 4th International Conference on Information Technology, Computer, and Electrical Engineering (ICITACEE) provides a forum for researchers, academicians, professionals, and students from various engineering fields and with cross-disciplinary working or interest in the development and design of information technology, computer system, and electrical engineering to interact and disseminate the latest issues and researches. It also offers opportunity to enjoy the heritage and the beauty of Semarang.

ICITACEE is an annual conference organized both by Department of Electrical Engineering and Department of Computer Engineering and in 2017 this conference will be organized by Department of Computer Engineering.

The papers accepted and presented will be forwarding for consideration to be published in the IEEE Xplore Digital Library. Several media types will be produced for Proceeding with the following ISBN and catalog numbers:

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1. Prof. Dr. Ir. Riri Fitri Sari, M.Sc., M.M. (University of Indonesia).
2. Azli Yahya, B.Eng., M.Sc., Ph.D. (Universiti Teknologi Malaysia).
3. Assoc. Prof. Dr. Mohamad Noorman Masrek (Universiti Teknologi Mara).

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Wednesday 18, 13.00-17.00

Track: Electric Power

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NO	ID	Title	Authors
1	EPW-01	A Bi-directional Boost Converter-Based Non-Isolated DC-DC Transformer with Modular Solid-State Switches for Medium-/High-Voltage DC Grids	Ahmed Elserougi, Ahmed Massoud, Shehab Ahmed
2	EPW-02	Enhancing the DC Voltage Utilization of Twelve-Switch Voltage Source Inverter Feeding Symmetrical/Asymmetrical Nine-Phase Loads	Ahmed Elserougi, Ibrahim Abdelsalam, Ahmed Massoud, Shehab Ahmed
3	EPW-03	Determination of the Conduction Angle for Switched Reluctance Motor Drive	Slamet Riyadi
4	EPW-04	Load Shedding and Forecasting in Distribution Systems with PV-based Distributed Generation and Electric Vehicles	Anas Tahir, Ahmed Massoud
5	EPW-05	A Three-Level Common-Emitter Current Source Inverter with Reduced Device Count	Suroso, Daru Tri Nugroho, Winasis Winasis
6	EPW-06	Reduction of Cogging Torque on Brushless Direct Current Motor with Segmentation of Magnet Permanent	Rudy Setiabudy, Herlina, Yudha Sasmita Putra
7	EPW-07	Optimal Photovoltaic Placement at the Southern Sulawesi Power System for Stability Improvement	Ardiaty Arief, Muhammad Bachtiar Nappu, Sitti Marwah Rachman, Mustadir Darusman
8	EPW-08	Feature Extraction Using Hilbert-Huang Transform for Power System Oscillation Measurements	Buyung Sofiarto Munir, Muhamad Reza, Agung Trisetyarso, Bahtiar Saleh Abbas
9	EPW-09	Audit of Harmonic on Residential Loads in Central Java	Sapto Nisworo, Deria Pravitasari
10	EPW-10	Harmonics Monitoring of Car's Inverter using Discrete Fourier Transformation	Mat Syai'in, N.H. Rohiem, R. K. Tobing, M.A. Atmoko, M. F. Adiatmoko, A. Soeprijanto, A.M Hatta, Sekartedjo

A Bi-directional Boost Converter-Based Non-Isolated DC-DC Transformer with Modular Solid-State Switches for Medium-/High-Voltage DC Grids

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Abstract— In this paper, a bi-directional non-isolated dc-dc transformer is proposed, which can be used for connecting different dc voltage levels in medium-/high-voltage dc grids. The proposed dc-dc transformer is based on the conventional bi-directional boost converter, but with modular solid-state switches to avoid the complexity of employing series-connected Insulated Gate Bipolar Transistors (IGBTs) to meet the high-voltage requirement. The modular solid-state switch consists of cascaded modules, where each module consists of Half-Bridge Sub-Module (HB-SM) along with clamping IGBT. Small module capacitance is required in the proposed architecture as it is used typically to clamp the module voltage, not to store the energy to be delivered to the load. This affects positively the lifetime of the dc-dc transformer. On the other hand, clamping IGBTs ensure a successful operation with balanced capacitors' voltages without the need for voltage or current measurements. A detailed illustration for the proposed architecture is presented along with its operational modes and controller. Simulation results for a 2MW 10 kV/25 kV dc-dc transformer are presented to show the viability of the proposed architecture.

Keywords— *Bi-directional converter; dc-dc transformer; modular solid-state switch.*

I. INTRODUCTION

The dc-dc transformer is an essential component in medium-/high-voltage dc grids for connecting two different dc voltage levels [1]. The dc-dc transformer can be classified into isolated [2-5] and non-isolated [6-10]. In the isolated type, an isolation transformer is employed to isolate between the high- and low-voltage sides.

The conventional non-isolated dc-dc boost converters are not normally used for applications requiring high voltage gains because of the difficulties with the main switch stresses [1], as the employed switches are rated at the higher voltage level. To meet the required high-voltage rating of the switch, series-connection of IGBTs [11], or multi-module dc-dc transformer configurations [9] can be used. In case of series connection of IGBTs, there are some challenges related to static and dynamic voltage sharing among the involved IGBTs. Active gate control can be deployed, yet with increasing system complexity [11].

While in case of multi-module converters, there are two possible connections [9]: cascaded converters and series converters. In cascaded converters [9], the first converter has intermediate voltage stresses and high current stresses, while the second converter has high voltage stresses and low current

stresses. In addition, there is a difficulty in the control due to the interaction between converters. In case of series converters with one dc input [9], each converter processes only half of the input power, which enhances the system efficiency, and the employed switches are rated at half of the total voltage stress, which is still high for one IGBT. To reduce the voltage rating of employed switches, multi-module (generally, n modules) can be employed by connecting their output in series, but their inputs should be isolated which necessitates isolating transformers.

In order to meet the required high-voltage rating of switches in medium-/high-voltage applications without employing series-connection of switches nor multi-module converters, multi-module-cascaded high-voltage composite switch can be employed which enables recruiting low-voltage IGBTs in high-voltage applications.

In [12], a high-voltage composite switch, which is based on Modular Multilevel Converter (MMC), is proposed. This composite switch entails cascaded modules, where each module consists of a dc capacitor, a resistor, and four IGBTs (i.e. a Full-Bridge Sub-Module (FB-SM)). The voltage balancing is guaranteed automatically during the conduction modes of this configuration. The main drawback is that the number of required gate drivers is four times that with the series-connected IGBTs.

In this paper, a modular high-voltage switch with a reduced number of IGBTs is proposed for a bi-directional boost converter-based dc-dc transformer. The proposed modular switch entails cascaded modules, where each module consists of Half-Bridge SM (HB-SM) (each SM has two IGBTs and a small dc capacitor) along with clamping IGBT. The capacitance of the HB-SM is small, as the dc capacitor is used as a snubber circuit to clamp the voltage of the HB-SM not to store the energy to be delivered to the load. While clamping IGBTs are employed to ensure balanced capacitors' voltages during the operation without the need for voltage or current measurement. The modular switch's modules are operated with Marx concept, i.e. basic cell for Marx [13] is employed, where the capacitors are connected in parallel during the bypass mode (turn-on) of the modular switch, and are connected in series during the turn-off period of the modular switch. The HB-SMs' capacitances should be selected small enough to ensure insignificant effect on the boost converter operation and to limit the inrush current emanated from the repetitive switching of modules' capacitors during the operation. Detailed illustration and design for the proposed architecture are presented in the following sections.

11	EPW-11	Voltage Sag Mitigation Due To Short Circuit Current Using Dynamic Voltage Restorer Based On Hysteresis Controller	Nizamul Muluk, Agung Warsito, Juningtyastuti, Iwan Setiawan
12	EPW-12	Design Analysis of Photovoltaic Systems as Renewable Energy Resource in Airport	Hermawan, Karnoto
13	EPW-13	Design and Development of Data Acquisition for Leakage Current at Electrical Tracking Test	Jumrianto, Wahyudi, Abdul Syakur
14	EPW-14	Experimental Study on Lightning Air Terminal Performance based on Material Type	Abdul Syakur, Agung Nugroho, Anastasia Br. Napitupulu
15	EPW-15	Comparison of Cost Estimation Methods in Power Wheeling for Java-Bali Interconnection System	Hermawan, Trias Andromeda
16	EPW-16	Optimization of Gas Turbine Power Plant Economic Dispatch using Cuckoo Search Algorithm Method	Tejo Sukmadi, Ariya Dwi Wardhana, Munawar Agus Riyadi

Track: Information Technology, and Computer Sciences
Room: ICT

NO	ID	Title	Authors
1	INF-01	Review on the Application of Financial Technology for the Wayang Orang Ngesti Pandowo Cultural Creative Industry	Albertus Dwiyoga Widianoro, Ridwan Sanjaya, Tjahjono Rahardjo, Rahmat Djati
2	INF-02	Online Judging System for Programming Contest using UM Framework	I Made Wirawan, Agusta Rakhmat Taufani, Irawan Dwi Wahyono, Irham Fadlika
3	INF-03	Regulatory Framework Creation Analysis to Reduce Security Risks The Use of Social Media in Companies	Oktavianus Teguh Prayitno, Ofelia Cizela da Costa Tavares, Amaya Andri Damaini, Djoko Budiyanto Setyohadi
4	INF-04	Student Learning Styles and Emotional Tendencies Detection Based on Twitter	Robet Habibi, Djoko Budiyanto Setyohadi, Kartika Imam Santoso
5	INF-05	Inter-Organizational Information System Affect Organization Structure for Supply Chain Management Using Method SET and Method TREV	Rakotovao Andriamitovo Andry Michel, Ginanjar Setyo Nugroho, Chaken Charles Z Slarmanat, Djoko Budiyanto Setyohadi

Regulatory Framework Creation Analysis to Reduce Security Risks The Use of Social Media in Companies

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Abstract— Companies, agencies and individuals currently use social media as a means of communication and business facilities, because through social media the staffs can connect globally in expressing ideas, feelings or emotions. However, social media users need to be aware of the security risk to their organization. In this paper, we present a perception of the risks, benefits, and strategies of social media applications developed from societies that use social media in the company by discussing existing regulations and how they apply to the use of social media by companies/institutions also to overcome this challenge. From this research, a solution is made for companies whose security rules are being used by the public. This regulatory framework can serve as a basis for establishing company internal policies for the use of social media by its employees. With the creation of policies that are the result of this study, companies that have the maximum ability in the field of information technology.
Keywords— Social media, security risk, privacy, Security policy

I. INTRODUCTION

Social media are common today. Social media is used for communication, from sending messages to sharing many things with the community and the people closest. The popularity of social media in the internet world has been widely used to build a network of friends to business networks, this forces businesses to adapt marketing strategies and involve social media as a marketing tool[1]. Some companies today are even actively creating specialized corporate social media communities such as corporate Twitter channels, YouTube channels, or Facebook fan pages. Social media are generally used for communication facilities in the company or as a media campaign and marketing[2].

The popularity of social media cannot be separated from the security risks that threaten users. The threat of this risk certainly affects the companies that are actively involved in social media and not alert[3]. Mistakes in using social media can lead to customer attacks, negative publicity and reputation damage to the company[4].

In addition to this, organizations are also facing threats from their own employees who often post on social media on behalf of the organization either through their personal

accounts or company accounts. Other risks received can include phishing, information leakage, malware to hacking.

Social media policies are seen as an important part of the organization[5]. The regulatory framework is an important aspect of controlling the use of social media within corporations[6]. In this paper, we find the risks of using social media to develop more effective strategies to decrease the security threat by social media to companies through the establishment of a regulatory framework.

II. SOCIAL MEDIA SECURITY RISKS

The development of an increasingly modern era encourages the change of the system, either directly or indirectly, as in a company. Technological advances, especially the internet make the limitations of distance, time and cost can be easily overcome. Implementation of technology, in this case, to improve business, sales and buy of products is to use electronic commerce[7]. Company policies that are made for enterprise information security from social media are often only accepted for that purpose without being read and understood by users. The implications are privacy and security[8].

Through good communication, a company will feel comfortable and cut the perception of corporate risk, and ultimately can influence consumers in determining decisions in a company through social media. In accordance with research conducted by Khailil Leonil (2015) which states that perceived risk perception of consumers have a significant impact on online decisions, and related to the existence of online fraud, the company always pay attention to the quality of service in terms of risk perception, this is due to perception Risk contains uncertainty of a risk situation in a company that is product risk, transaction risk and psychological risk[9].

Understanding the perception of risk is needed[10]. Every person within a company has different perceptions of risk. A member of the IT department will see viruses or malware as a risk that could impact data loss on the company,

6	INF-06	Integration Of Pharmacy And Drug Manufacturers In RSUD Dr Samratulangi Tondano By ESB WSO2 To Improve Service Quality (A Case Study of RSUD Dr Samratulangi Tondano, Minahasa Regency, North Sulawesi)	Damar Suryo Sasono, Frendy Rocky Rumambi, Ressa Priskila, Djoko Budiyo Setyohadi
7	INF-07	Analysis and Design of Web-Geographic Information System for Tropical Diseases-Prone Areas: A Case Study of East Java Province, Indonesia	Anik Vega Vitianingsih, Dwi Cahyono, Achmad Choiron
8	INF-08	Smartphone Application Development for Monitoring and Early Warning on Environmental Health	Kodrat Iman Satoto, Eko Didik Widiyanto, Sumardi
9	INF-09	Sentiment Analysis on Twitter Posts: An analysis of Positive or Negative Opinion on Gojek	Ike Pertiwi Windasari, Fajar Nurul Uzzi, Kodrat Iman Satoto
10	INF-10	Design of Learning Media for Fish Classification with Augmented Reality Technology	Kurniawan Teguh Martono, Adnan Fauzi
11	INF-11	Sentiment Analysis on Travel Destination in Indonesia	Ike Pertiwi Windasari, Dania Eridani
12	INF-12	Wireless Sensor Network Design for Landslide Warning System in IoT Architecture	Aghus Sofwan, Sumardi, M. Ridho, Abdul Goni, Najib
13	INF-13	Enterprise Architecture Analysis and Design of Manufacturer Company Based on TOGAF ADM 9.1: Case Study on Sales Marketing and Technology Function in PT. XYZ	Rahmat Mulyana, Jihan Herdiyanti Syafira
14	INF-14	Evaluation of IT Governance Using the Cobit 5 Framework on PTPN 7	Ibrahim, Arnisa Stefanie
15	INF-15	Automatic detection of epilepsy using Wavelet Transformation and ELM	Siswandari Noertjahjani, Adhi Susanto, Risanuri Hidayat, Samekto Wibowo
16	CSI-01	Mapping Multiple Databases to Resource Description Framework with Additional Rules as Conclusions Drawer	Atleiya Julianita, Saptadi Nugroho, Banu Wirawan Yohanes
17	CSI-02	Designing Android Reward System Application in Education to Improve Learning Quality	Ratih Isnaini, Basori Basori, Rosihan Ari Yuana, Dwi Maryono
18	CSI-03	Location Prediction Model using Naïve Bayes Algorithm in a Half-open Building	Banu Wirawan Yohanes, Samuel Yanuar Rusli, Hartanto Kusuma Wardana
19	CSI-04	A System Engineering Approach to the Implementation of the Internet of Things (IoT) in a Country	Muhammad Suryanegara, Ajib Setyo Arifin, Muhamad Asvial, Gunawan Wibisono

20	CSI-05	Application of Design Patterns and Quality Measurement on Academic Information Systems	Siti Rochimah, Afif Ishamsyah Hantriono, Rizky Januar Akbar, Andreyan Rizky Baskara
21	CSI-06	Part of Speech features for Sentiment Classification based on Latent Dirichlet Allocation	Eka Surya Usop, R. Rizal Isnanto, Retno Kusumaningrum
22	CSI-07	A Multiple Classifiers Broadcast Protocol for VANET	Sami S. Alwakeel, Hesham A. Altwaijry, Agung B. Prasetijo
23	CSI-08	Buy/Sell Signal Detection in Stock Trading with Bollinger Bands and Parabolic SAR with Web Application for Proofing Trading Strategy	Agung B. Prasetijo, Takdir A. Saputro, Ike P. Windasari, Yudi E. Windarto
24	CSI-09	Hoax Detection System on Indonesian News Sites Based on Text Classification using SVM and SGD	Agung B. Prasetijo, R. Rizal Isnanto, Dania Eridani, Yosua Alvin Adi Soetrisno, M. Arfan, Aghus Sofwan
25	CSI-10	Analysis of Custody Transfer on Moving Bundle Protocol of Wireless Router in Delay Tolerant Network (DTN)	Fitri Noviani, Deris Stiawan, Sri Desy Siswanti, Tri Wanda Septian, Munawar A. Riyadi, Fahad Aljaber, Rahmat Budiarto

Track: Electronics, Robotics, and Instrumentation, Image & Signal Processing, Wireless & Telecommunications

Room: ELROINS

NO	ID	Title	Authors
1	ERI-01	Ball Detection Algorithm for Robot Soccer based on Contour and Gradient Hough Circle Transform	Ane Cornelia, Iwan Setyawan
2	ERI-02	Hardware Design of Queuing Free Environmental Friendly Automatic Toll Gate Using RFID	W. A. Syafei, A. F. Listyono, Darjat Darjat
3	ERI-03	Smart Meter based on Time Series Modify and Constructive Backpropagation Neural Network	M. F. Adiatmoko, Adi Soeprijanto, Mat Syai'in, Nasyith Hananur R
4	ERI-04	The Development of Soil Water Content Detector	Amin Suharjono, Muhammad Mukhlisin, Nur Khodijah M. Alfisyahrin
5	ERI-05	Applying Maritime Wireless Communication to Support Vessel Monitoring	Zahir Zainuddin, Wardi Wardi, Yurika Nantan

A Multiple Classifiers Broadcast Protocol for VANET

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Abstract—Many types of artificial intelligent machines have been used for decision making purposes. In VANET broadcast protocols, vehicles must decide the received messages are to be rebroadcast or not. Several attributes such as sender-to-receiver distance, sender-receiver speed difference, number of neighboring vehicles, as well as vehicle’s movement direction are important measures to take the broadcast decision. As the relationships of attributes to the broadcast decision cannot be mathematically defined, the use of a classifier-based artificial intelligence may approximately predict the relationships of all the incorporated attributes to such a decision. As the decision is based on prediction, the use of multiple classifiers in decision making may increase accuracy. Therefore, this research employs a combined-classifiers at an abstract level to provide firmer broadcast decisions on VANET. Our research results justify that the performance of our combined multiple-classifiers outperformed a single-classifier scheme. The multi-classifiers scheme contributes to an average increase of 2.5% in reachability compared to that of the efficient counter-based scheme (ECS). The combined multi-classifiers scheme also improves the saving in rebroadcast tries by 38.9%.

Keywords—Broadcast-storm, classifier, VANET, vehicular attribute.

I. INTRODUCTION

An efficient broadcast has always been a hot issue in broadcast protocol area. Several schemes have been available, from heuristic (e.g. probability-based, counter-based broadcast) to topology-based broadcast (e.g. distance-based broadcast). However, most of the solutions have used mostly only a few attributes (whether local or global), such as the use of sender-to-receiver distance, number of message duplicates received, or even only employing probability to reduce the number of nodes/vehicles that rebroadcast messages to mitigate the broadcast-storm problem (the massive message redundancy, contention and collision) [1, 2, 3, 4].

In reality, considering many attributes in the broadcast decision mechanism may lead to a more efficient broadcast scheme. For example, a vehicle having a greater distance from the sender vehicle is more potential to rebroadcast messages than that of having a smaller distance. Likewise, a vehicle that has a higher speed differential to the sender is considered to be a better broadcast candidate as it will go out from the sender's

radio coverage fast. The number of neighboring vehicles can also be used to select the rebroadcast candidates. The denser the neighbors, the smaller the probability for a vehicle to rebroadcast. Therefore, a multiple-attributes scheme are more probable to outperform a single-attribute scheme if such attributes are properly treated.

To properly handle the attributes, a classification algorithm (known as a classifier or an expert) can be used to examine all the possible situations of the attributes dealing with current vehicular network situation. For example, a greater distance threshold should be applied for vehicles deserved rebroadcast in a dense network. However, a smaller threshold is required to maintain high network reachability. A classifier is able to recognize the input conditions of the attributes and to make decisions based on the knowledge obtained from prior training (called as model). Our work employs the following attributes: sender-to-receiver distance, number of message copies, vehicular density, as well as speed differential and movement direction.

Discussion of the research are presented in what follows. Research in broadcast protocols are presented in section 2. Sections 3 and 4 discuss how our experiments are set up and experimented. Results of the study are presented and discussed in section 5 and conclusions can be found in section 6.

II. THE BROADCAST-STORM MITIGATION SCHEMES

One simple method to reduce the broadcast-storm is to use a probabilistic approach. The probabilistic based scheme uses probability mechanism for node selection rather than using a threshold mechanism (such as in distance-based threshold) for determining rebroadcast nodes. Basic broadcast techniques in VANETs follow either a l -persistence or a p -persistence scheme. The l -persistence scheme has the advantages of low complexity and high penetration rate, but creates massive redundancy. The p -persistence scheme may reduce message redundancy but may increase in total latency and degraded penetration rate. For example, literature [5] proposed three schemes: weighted p -persistence, slotted l -persistence, and slotted p -persistence broadcast schemes, whilst literature [6] proposed an adaptive probabilistic based scheme that senses idle channel time to represent the broadcast probability.

Analysis of Custody Transfer on Moving Bundle Protocol of Wireless Router in Delay Tolerant Network (DTN)

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Abstract—Delay Tolerant Network (DTN) is a network architecture to provide a solution for networks which have intermittent connectivity, long delay, a different data rate and high error rate. DTN is used as an alternative solution for communication networks in remote areas. DTN communications model based on the nodes mobility to transmit data between nodes which geographically separated so if disconnection problem happens when data transfer is running, bundle which already has been sent will remain stored in the last node where the data reached, and then when connection reconnects, the data transfer process can be continued without repeating the process from the beginning until the data reaches the destination node. This paper analyzes the custody transfer on moving bundle protocol of wireless router in a DTN. The analysis uses a delivery data scenario that implements a wireless router moving on a DTN Network by showing custody transfer bundle protocol and takes into account the time of transfer in any data from DTN log. The scenario considers two conditions, namely the LoS (Line of Sight) and n-LoS (near Line of Sight) with distance and data variation. Experimental results show the important role of the custody transfer agent in DTN network.

Keywords—Delay Tolerant Network; Custody Transfer; Bundle Protocol; Wireless Router; Digital Courier

I. INTRODUCTION

The concept of Delay Tolerant Network (DTN) can be applied on the network by utilizing the tools which acts as a digital courier to spread data from one place to another [1]. Digital courier itself is in the form of wireless routers which move to the area which requires network access and data collection. The digital courier moves to a place which has the connection access and processes those requests so that internet services can be applied and presented to an area which has the following characteristics: long delay, high rate of loss, and the low level of connectivity [2]. Bundle layer or bundle protocol is the main protocol used in DTN. Bundle layers have role to save and forward the whole or a portion of the bundle between the nodes.

In DTN, there is a term called the custody transfer. Custody transfer [3] is a mechanism to improve reliability of delivery using the hop-by-hop reliability, one or more hops, with no end-to-end connectivity thru more reliable and responsible transferring of delivery. Custody Transfer gives responsibility in every data transfer to destinations between its nodes (node to node one another). In this work people are modelled as carrier routers (digital couriers) with intermediate delivery of data between servers and clients using DTN.

The rest of the paper is organized as follows. Related works on mapping research area is described in Section 2. Section 3 presents the experimental scenario. Section 4 discusses the result. Finally, Section 5 provides our conclusion and identified potential future work to be carried out in this area.

II. RELATED WORKS

Bundle layer or bundle protocol [4] is the main protocol which used in DTN. Bundle layer is in charge of storing and forwarding the whole or part of bundles between nodes. A bundle layer protocol is used when across all networks (region) in the DTN, it supports resending the data from one node to another, which being damaged and lost on both transport layer and bundle. Unfortunately, in a proposal by [5] there was not a single transport layer which works end-to-end at DTN. It means that the end-to-end reliability can only be implemented in the bundle layer.

Meanwhile, proposals by [3] and [6] described the custody transfer or "sending custody data" was performed on nodes which have been successfully received a bundle. This node which will send a bundle will ask the next node to send bundle acknowledgment. If the next node was ready to accept a bundle then the acknowledgment will be sent to the previous node.

III. EXPERIMENTAL SCENARIO

The research is conducted through a series of experiments using simulation consisting of three devices (laptops) which act as server, router, and a client. Scenarios consider two

6	ERI-06	Design of Lungs Volume Measuring Instrument using Pressure Sensor Based on Arduino Uno R3 with Bluetooth Integration	Gayuh Nurul Huda, Eko Didik Widiyanto, Oky Dwi Nurhayati
7	ERI-07	Designing and Implementing the Arduino-based Nutrition Feeding Automation System of a Prototype Scaled Nutrient Film Technique (NFT) Hydroponics using Total Dissolved Solids (TDS) Sensor	Dania Eridani, Olivia Wardhani, Eko Didik Widiyanto
8	ERI-08	Door And Light Control Prototype Using Intel Galileo Based Internet of Things	Yudi Eko Windarto, Dania Eridani
9	ERI-09	Particle Swarm Optimization (PSO)-Based Self Tuning Proportional, Integral, Derivative (PID) for Bearing Navigation Control System on Quadcopter	Sumardi, Muhammad Surya Sulila, Munawar Agus Riyadi
10	ERI-10	Design of Integrated SCADA Systems in Piston Production Manufacturing Case Study on the Conveyor, the Coolant, the Hydraulic, and the Alarm Systems using PLC CJ1M and CJ1W-ETN21	Syahril Ardi, Agus Ponco, Rizky Awaludin Latief
11	ERI-11	Design of Pokayoke Systems to Increase the Efficiency of Function Check Oxygen Sensor Machine using Programmable Logic Controller in Manufacturing Industry	Syahril Ardi, Harits Abdurrahman
12	TEL-01	Design of Measurement System for HF MIMO NVIS Channel	Sarah Lasroma Manalu, Gamatyo Hendratoro, Achmad Mauludiyanto
13	TEL-02	Design and Analysis of Slimjim Dual Band VHF and UHF Antenna with Crossarm Variation	Yuli Christyono, Ihsan Atmaji, Teguh Prakoso
14	TEL-03	Bandwidth Enhancement of Circular Microstrip Antenna Using Characteristic Mode Analysis	Teguh Prakoso, Liya Y. Sabila, Denti A. Damayanti, Aghus Sofwan, Munawar A. Riyadi, Sudjadi, Sukiswo, Enda W. Sinuraya, Karnoto
15	IMG-01	Pattern Recognition Analysis of Herbal Leaves Based on Distance-Based Similarity Measures Using the Gray Level Co-Occurrence Matrix Feature Extraction	M. Fahmi Awaj, R. Rizal Isnanto, Munawar Agus Riyadi
16	IMG-02	StegoCrypt Method using Wavelet Transform and One-Time Pad for Secret Image Delivery	De Rosal Ignatius Moses Setiadi, Andik Setyono, Mulyono
17	IMG-03	A Secure Image Watermarking using Chinese Remainder Theorem Based on Haar Wavelet Transform	De Rosal Ignatius Moses Setiadi, Usman Sudibyoy, Fatma Eranisa, Eko Hari Rachmawanto, Christy Atika Sari
18	IMG-04	Plant Age Identification System of Outdoor Hydroponic Cultivation Based on Digital Image Processing	Thomas Agung Setyawan, Arif Nursyahid, Mochammad Rizal Wibisono, Eni Dwi Wardihani, Helmi

19	IMG-05	Herb Leaves Recognition Using Combinations of Hu's Moment Variants - Backpropagation Neural Network and 2-D Gabor Filter - Learning Vector Quantization (LVQ)	R. Rizal Isnanto, Achmad Hidayanto, Ajub Ajulian Zahra, Eskanesiari, Aditya Indra Bagaskara, Risma Septiana
----	--------	---	---

TABLE OF CONTENTS

Computer Science

- 1 Mapping Multiple Databases to Resource Description Framework with Additional Rules as Conclusions Drawer
Atleiya Julianita, Saptadi Nugroho, Banu Wirawan Yohanes
- 5 Designing Android Reward System Application in Education to Improve Learning Quality
Ratih Isnaini, Basori Basori, Rosihan Ari Yuana, Dwi Maryono
- 11 Location Prediction Model using Naïve Bayes Algorithm in a Half-open Building
Banu Wirawan Yohanes, Samuel Yanuar Rusli, Hartanto Kusuma Wardana
- 16 A System Engineering Approach to the Implementation of the Internet of Things (IoT) in a Country
Muhammad Suryanegara, Ajib Setyo Arifin, Muhamad Asvial, Gunawan Wibisono
- 20 Application of Design Patterns and Quality Measurement on Academic Information Systems
Siti Rochimah, Afif Ishamsyah Hantriono, Rizky Januar Akbar, Andreyan Rizky Baskara
- 27 Part of Speech Features for Sentiment Classification based on Latent Dirichlet Allocation
Eka Surya Usop, R. Rizal Isnanto, Retno Kusumaningrum
- 31 A Multiple Classifiers Broadcast Protocol for VANET
Sami S. Alwakeel, Hesham A. Altwaijry, Agung B. Prasetijo
- 37 Buy/Sell Signal Detection in Stock Trading with Bollinger Bands and Parabolic SAR with Web Application for Proofing Trading Strategy
Agung B. Prasetijo, Takdir A. Saputro, Ike P. Windasari, Yudi E. Windarto
- 41 Hoax Detection System on Indonesian News Sites Based on Text Classification using SVM and SGD
Agung B. Prasetijo, R. Rizal Isnanto, Dania Eridani, Yosua Alvin Adi Soetrisno, M. Arfan, Aghus Sofwan
- 46 Analysis of Custody Transfer on Moving Bundle Protocol of Wireless Router in Delay Tolerant Network (DTN)
Fitri Noviani, Deris Stiawan, Sri Desy Siswanti, Tri Wanda Septian, Munawar A. Riyadi, Fahad Aljaber, Rahmat Budiarto

Electric Power

- 50 A Bi-directional Boost Converter-Based Non-Isolated DC-DC Transformer with Modular Solid-State Switches for Medium-/High-Voltage DC Grids
Ahmed Elserougi, Ahmed Massoud, Shehab Ahmed
- 56 Enhancing the DC Voltage Utilization of Twelve- Switch Voltage Source Inverter Feeding Symmetrical/Asymmetrical Nine-Phase Loads
Ahmed Elserougi, Ibrahim Abdelsalam, Ahmed Massoud, Shehab Ahmed
- 62 Determination of the Conduction Angle for Switched Reluctance Motor Drive
Slamet Riyadi
- 67 Load Shedding and Forecasting in Distribution Systems with PV-based Distributed Generation and Electric Vehicles
Anas Tahir, Ahmed Massoud
- 73 A Three-Level Common-Emitter Current Source Inverter with Reduced Device Count
Suroso Suroso, Daru Tri Nugroho, Winasis Winasis
- 77 Reduction of Cogging Torque on Brushless Direct Current Motor with Segmentation of Magnet Permanent
Rudy Setiabudy, Herlina Herlina, Yudha Sasmita Putra
- 83 Optimal Photovoltaic Placement at the Southern Sulawesi Power System for Stability Improvement
Ardiaty Arief, Muhammad Bachtiar Nappu, Sitti Marwah Rachman, Mustadir Darusman

- 89 Feature Extraction Using Hilbert-Huang Transform for Power System Oscillation Measurements
Buyung Sofiarto Munir, Muhamad Reza, Agung Trisetyarso, Bahtiar Saleh Abbas
- 93 Audit of Harmonic on Residential Loads in Central Java
Sapto Nisworo, Deria Pravitasari
- 98 Harmonics Monitoring of Car's Inverter using Discrete Fourier Transformation
Mat Syai'in, N.H. Rohiem, R. K. Tobing, M.A. Atmoko, M. F. Adiatmoko, A. Soeprijanto, A.M Hatta, Sekartedjo Sekartedjo
- 104 Voltage Sag Mitigation Due To Short Circuit Current Using Dynamic Voltage Restorer Based On Hysteresis Controller
Nizamul Muluk, Agung Warsito, Juningtyastuti Juningtyastuti, Iwan Setiawan
- 109 Design Analysis of Photovoltaic Systems as Renewable Energy Resource in Airport
Hermawan Hermawan, Karnoto Karnoto
- 113 Design and Development of Data Acquisition for Leakage Current at Electrical Tracking Test
Jumrianto Jumrianto, Wahyudi Wahyudi, Abdul Syakur
- 119 Experimental Study on Lightning Air Terminal Performance based on Material Type
Abdul Syakur, Agung Nugroho, Anastasia Br. Napitupulu
- 123 Comparison of Cost Estimation Methods in Power Wheeling for Java-Bali Interconnection System
Hermawan Hermawan, Trias Andromeda
- 127 Optimization of Gas Turbine Power Plant Economic Dispatch using Cuckoo Search Algorithm Method
Tejo Sukmadi, Ariya Dwi Wardhana, Munawar Agus Riyadi

Electronics, Robotics and Instrumentation

- 132 Ball Detection Algorithm for Robot Soccer based on Contour and Gradient Hough Circle Transform
Ane Cornelia, Iwan Setyawan
- 138 Hardware Design of Queuing Free Environmental Friendly Automatic Toll Gate Using RFID
W. A. Syafei, A. F. Listyono, Darjat Darjat
- 143 Smart Meter based on Time Series Modify and Constructive Backpropagation Neural Network
M. F. Adiatmoko, Adi Soeprijanto, Mat Syai'in, Nasyith Hananur R
- 150 The Development of Soil Water Content Detector
Amin Suharjono, Muhammad Mukhlisin, Nur Khodijah M. Alfiyah
- 154 Applying Maritime Wireless Communication to Support Vessel Monitoring
Zahir Zainuddin, Wardi Wardi, Yurika Nantan
- 158 Design of Lungs Volume Measuring Instrument using Pressure Sensor Based on Arduino Uno R3 with Bluetooth Integration
Gayuh Nurul Huda, Eko Didik Widiyanto, Oky Dwi Nurhayati
- 166 Designing and Implementing the Arduino-based Nutrition Feeding Automation System of a Prototype Scaled Nutrient Film Technique (NFT) Hydroponics using Total Dissolved Solids (TDS) Sensor
Dania Eridani, Olivia Wardhani, Eko Didik Widiyanto
- 172 Door And Light Control Prototype Using Intel Galileo Based Internet of Things
Yudi Eko Windarto, Dania Eridani
- 177 Particle Swarm Optimization (PSO)-Based Self Tuning Proportional, Integral, Derivative (PID) for Bearing Navigation Control System on Quadcopter
Sumardi Sumardi, Muhammad Surya Sulila, Munawar Agus Riyadi
- 183 Design of Integrated SCADA Systems in Piston Production Manufacturing Case Study on the Conveyor, the Coolant, the Hydraulic, and the Alarm Systems using PLC CJ1M and CJ1W-ETN21
Syahril Ardi, Agus Ponco, Rizky Awaludin Latief
- 188 Design of Pokayoke Systems to Increase the Efficiency of Function Check Oxygen Sensor Machine using Programmable Logic Controller in Manufacturing Industry
Syahril Ardi, Harits Abdurrahman

Image and Signal Processing

- 193 Pattern Recognition Analysis of Herbal Leaves Based on Distance-Based Similarity Measures Using the Gray Level Co-Occurrence Matrix Feature Extraction
M. Fahmi Awaj, R. Rizal Isnanto, Munawar Agus Riyadi

- 199 StegoCrypt Method using Wavelet Transform and One-Time Pad for Secret Image Delivery
Andik Setyono, De Rosal Ignatius Moses Setiadi, Muljono Muljono
- 204 A Secure Image Watermarking using Chinese Remainder Theorem Based on Haar Wavelet Transform
Usman Sudibyo, Fatma Eranisa, De Rosal Ignatius Moses Setiadi, Christy Atika Sari
- 209 Plant Age Identification System of Outdoor Hydroponic Cultivation Based on Digital Image Processing
Arif Nursyahid, Mochammad Rizal Wibisono, Eni Dwi Wardihani, Helmy Helmy, Thomas Agung Setyawan
- 215 Herb Leaves Recognition Using Combinations of Hu's Moment Variants - Backpropagation Neural Network and 2-D Gabor Filter - Learning Vector Quantization (LVQ)
R. Rizal Isnanto, Achmad Hidayatno, Ajub Ajulian Zahra, Eskanesiari Eskanesiari, Aditya Indra Bagaskara, Risma Septiana

Information Technology

- 221 Review on the Application of Financial Technology for the Wayang Orang Ngesti Pandowo Cultural Creative Industry
Albertus Dwiyoga Widiatoro, Ridwan Sanjaya, Tjahjono Rahardjo, Rahmat Djati
- 226 Online Judging System for Programming Contest using UM Framework
I Made Wirawan, Agusta Rakhmat Taufani, Irawan Dwi Wahyono, Irham Fadlika
- 231 Regulatory Framework Creation Analysis to Reduce Security Risks The Use of Social Media in Companies
Oktavianus Teguh Prayitno, Ofelia Cizela da Costa Tavares, Amaya Andri Damaini, Djoko Budiyanto Setyohadi
- 235 Student Learning Styles and Emotional Tendencies Detection Based on Twitter
Robet Habibi, Djoko Budiyanto Setyohadi, Kartika Imam Santoso
- 240 Inter-Organizational Information System Affect Organization Structure for Supply Chain Management Using Method SET and Method TREV
Rakotovao Andriamitovo Andry Michel, Ginanjar Setyo Nugroho, Chaken Charles Z Slarmanat, Djoko Budiyanto Setyohadi
- 245 Integration Of Pharmacy And Drug Manufacturers In RSUD Dr Samratulangi Tondano By ESB WSO2 To Improve Service Quality (A Case Study of RSUD Dr Samratulangi Tondano, Minahasa Regency, North Sulawesi)
Damar Suryo Sasono, Frendy Rocky Rumambi, Ressa Priskila, Djoko Budiyanto Setyohadi
- 251 Analysis and Design of Web-Geographic Information System for Tropical Diseases-Prone Areas: A Case Study of East Java Province, Indonesia
Anik Vega Vitianingsih, Dwi Cahyono, Achmad Choiron
- 257 Smartphone Application Development for Monitoring and Early Warning on Environmental Health
Kodrat Iman Satoto, Eko Didik Widiyanto, Sumardi Sumardi
- 262 Sentiment Analysis on Twitter Posts: An analysis of Positive or Negative Opinion on GoJek
Ike Pertiwi Windasari, Fajar Nurul Uzzi, Kodrat Iman Satoto
- 266 Design of Learning Media for Fish Classification with Augmented Reality Technology
Kurniawan Teguh Martono, Adnan Fauzi
- 272 Sentiment Analysis on Travel Destination in Indonesia
Ike Pertiwi Windasari, Dania Eridani
- 276 Wireless Sensor Network Design for Landslide Warning System in IoT Architecture
Aghus Sofwan, Sumardi Sumardi, M. Ridho, Abdul Goni, Najib Najib
- 280 Enterprise Architecture Analysis and Design of Manufacturer Company Based on TOGAF ADM 9.1: Case Study on Sales Marketing and Technology Function in PT. XYZ
Rahmat Mulyana, Jihan Herdiyanti Syafira
- 286 Evaluation of IT Governance Using the Cobit 5 Framework on PTPN 7
Ibrahim Ibrahim, Arnisa Stefanie
- 290 Automatic detection of epilepsy using Wavelet Transformation and ELM
Siswandari Noertjahjani, Adhi Susanto, Risanuri Hidayat, Samekto Wibowo

Wireless and Telecommunication

- 296** Design of Measurement System for HF MIMO NVIS Channel
Sarah Lasroma Manalu, Gamatyo Hendrantoro, Achmad Mauludiyanto
- 302** Design and Analysis of Slimjim Dual Band VHF and UHF Antenna with Crossarm Variation
Yuli Christyono, Ihsan Atmaji, Teguh Prakoso
- 308** Bandwidth Enhancement of Circular Microstrip Antenna Using Characteristic Mode Analysis
Teguh Prakoso, Liya Y. Sabila, Denti A. Damayanti, Aghus Sofwan, Munawar A. Riyadi, Sudjadi Sudjadi, Sukiswo Sukiswo, Enda W. Sinuraya, Karnoto Karnoto



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