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FOREWORD FROM EDITOR-IN-CHIEF

Volume 11 Terbitan kedua Tahun ini semakin mengukuhkan JPPI dalam melakukan standarisasi kualitas menuju internasionalisasi Jurnal. Melanjukan empat kali terbitan yang sudah full berbahasa Inggris. Terbitan pertama tahun ini di warnai dengan dinamika akan berpindahnya pengelolaan Jurnal, Bulletin, dan Majalah Ilmiah di setiap Pusat dan Balai Riset dari Kementerian dan Lembaga yang selama ini mengelolanya menuju pengelolaan yang akan dilakukan oleh Badan Riset dan Inovasi Nasional (BRIN). Kepindahan ini tentunya akan mengikuti migrasi besar-besaran fungsional Peneliti dari Kementerian dan Lembaga menuju rumah barunya di BRIN. Walaupun dinamika tersebut sedikit membuat penerbitan edisi kali ini mengalami beberapa tantangan, akan tetapi redaktur, Alhamdulillah tetap bisa menerbitkan JPPI dengan tepat waktu dan berstandarkan kualitas tinggi.

Pada edisi ini JPPI kembali menurunkan 6 tulisan yang mempunyai kualitas tinggi, dimulai dengan tulisan *pertama*, berjudul Desain Sistem Speech Recognition Penerjemah Bahasa Toraja Menggunakan Hidden Markov Model yang ditulis oleh Rismayani, Sri Wahyuni, Novita Sambo Layuk, Rian Hesron Loly, dan Ayub Nandito Daud. Penelitian ini bertujuan untuk membuat sistem Speech Recognition pada penerjemah Bahasa daerah Toraja dengan menggunakan Hidden Markov Model, yang merupakan metode klasifikasi yang menggunakan pembelajaran dari Baum-Welch, yang mengestimasi beberapa parameter untuk menemukan model terbaik yang menggambarkan training set. Hasil dari penelitian ini adalah sistem penerjemah bahasa daerah Toraja yang menggunakan metode Hidden Markov dapat membantu siapa saja yang belum mengetahui menggunakan dan arti Bahasa Indonesia dari Bahasa daerah Toraja. Selanjutnya tulisan kedua mengenai Implementation of Backoff Algorithm Bidirectional Forwarding Detection (BFD) and MPLS VRF for Fast Recovery Mechanism End-to-End Multi-Circuit (E2E) yang ditulis oleh Hillman Akhyar Damanik dan Merry Anggraeni. Artikel ilmiah ini menunjukkan salah satu perkembangan dan tren yang paling berguna dan menjanjikan dalam membangun sistem kebijakan untuk memetakan jalur paket untuk generasi sistem masa depan dengan Menerapkan dan memodelkan teknologi backbone multi-sirkuit di lingkungan penyedia layanan, untuk metode tautan multi-sirkuit dengan proses pemulihan dan redundansi yang cepat.

Pada artikel ketiga, ditulis oleh Merry Anggraeni dan Hillman Akhyar Damanik yang berjudul Ensemble Method Builds a Predictive by Integrating Several Models for Accurate Answer Prediction on Chatbot. Dimana Chatbot merupakan Kemajuan dalam algoritma pembelajaran mesin yang berdampak positif. Paper ini fokus pada penguatan prediksi jawaban chatbot dengan metode algoritma pembelajaran mesin (Machine Learning) metode klasifikasi ensemble 5 secara heterogen antara pengklasifikasi dasar dan meta-algoritma dan menggunakan voting maksimum (Majority Vote) atau Hard Voting pada jenis ansambel. Pada artikel keempat mengenai The Role of the Information and Communication Technology Sector in the Indonesian Economy yang ditulis oleh Karina Maryana dan Sartika Djamaluddin. Dengan melakukan pendekatan input-output diadopsi untuk menggambarkan aktivitas produksi dan difusi sektor TIK pada perekonomian Indonesia periode 2000-2014, hasil penelitian menunjukkan bahwa selain memiliki pengganda output yang besar, sektor Manufaktur TIK juga mendorong ekspor. Hasil dekomposisi diketahui bahwa pengaruh koefisien teknologi sebelumnya memberikan kontribusi yang cukup signifikan terhadap output sektor TIK. Namun, nilai-nilai tersebut telah berkurang dalam beberapa periode terakhir sehingga peran sektor TIK Indonesia sebagai sektor GPT menjadi kurang optimal

.

Selanjutnya pada artikel kelima mengenai Analisis Performansi Baremetal Provisioning pada Openstack Platform Berbasis Remote Virtualisasi Menggunakan Layanan Ironic yang ditulis oleh Joey Leomanz Bartolomiussihosa dkk. Penelitian ini dilakukan uji performansi antara baremetal dan virtual mesin dengan melakukan beberapa pengujian. Pengujian performansi berdasarkan sumber daya infrastruktur dari komputasi awan tersebut seperti CPU processing time, network throughput TCP, disk I/O, memory test throughput, jitter, dan packet loss. Hasil pengujian yang didapat, performansi baremetal ironic lebih baik dari virtual mesin. Dan pada artikel terakhir mengenai Design and Development Archipelago Architecture Learning Media Using Qr Code Technology yang ditulis oleh Hanna Pratiwi dkk, tulisan ini menjelaskan mengenai penggunaan teknologi QR-code untuk memperkenalkan budaya arsitektur khususnya tentang rumah adat di Indonesia yang dipadukan dengan pelatihan motorik melalui kegiatan mewarnai, dengan harapan anak-anak tidak akan kesulitan menulis seiring bertambahnya usia dan membantu mengembangkan kreativitas. Metode yang digunakan dalam penelitian ini adalah metode pengujian Human and Computer Interaction (HCI) yang difokuskan pada perancangan sistem pengguna sehingga implementasi sistem dapat dilakukan secara efisien dengan memperhatikan kebutuhan pengguna.

Demikian artikel-artikel yang dapat kami persembahkan untuk edisi kali ini. Semoga jalan kami tetap mempertahankan pengelolaan JPPI di Kementerian Kominfo dapat terealisasi dengan baik. Kami persilahkan sidang pembaca untuk menikmati invensi dan inovasi pada terbitan ini.

Jakarta, Desember 2021

Editor-in-Chief

Lembar Abstrak

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Rismayani, Sri Wahyuni, Novita Sambo Layuk, Rian Hesron Loly, Ayub Nandito Daud

Design System Speech Recognition Translator Toraja Language Using Hidden Markov Modelling

Jurnal Penelitian Pos dan Informatika Vol. 11 No. 2, Page 0-0

ABSTRACT

The Toraja regional language is one of the regional languages in the province of South Sulawesi, precisely in the Tana Toraja district of Indonesia. Indonesia has a variety of regional languages; regional languages are one of the cultural characteristics of a region, especially the Toraja language. This study aims to create a Speech Recognition system for Toraja regional language translators using the Hidden Markov Model. Hidden Markov Model is a classification method that uses Baum-Welch learning, which estimates several parameters to find the best model that describes the training set. Hidden Markov is a probabilistic algorithm used to determine the best word class for each word in the test data. The results of this study are the Toraja regional language translator system using the Hidden Markov method can help anyone who does not know the use and meaning of Indonesian from the Toraja regional language. Based on the Black Box testing for each function in the Toraja regional language translator system, valid results are obtained; Likewise, logic testing using the Hidden Markov method is free from logical errors. Then based on testing the questionnaire that has been obtained from 20 respondents, the results obtained are 80.2% strongly agree if the translator system is functional.

Keywords : Hidden Markov, Toraja Regional Language, Speech Recognition

Hillman Akhyar Damanik, Merry Anggraeni

Implementation of Backoff Algorithm Bidirectional Forwarding Detection (BFD) and MPLS VRF for Fast Recovery Mechanism End-to-End Multi-Circuit (E2E)

Jurnal Penelitian Pos dan Informatika Vol. 11 No. 2, Page 0-0

ABSTRACT

Implementing and modeling a multi-circuit backbone technology in a service provider environment, for a multi-circuit link method with a fast recovery and redundancy process, is one of the most useful and promising developments and trends in building a policy system for mapping packet paths for future systems generation. The use of streaming video conferencing, mobile user devices and mobility, the shift from TDM networks to IP based, cloud computing services, smart cities, and the Internet of Things (IoT), and Content Delivery Network (CDN) are the main generators of growth. Failure mechanism and fast recovery of link failure in connectivity tested using liveness with minimum link primary value intervals (10), secondary links (20) and tertiary links (30). The smaller the interval value in the policy specified in the preference, the rule will be used or take the recovery path link action first. The process that will be experienced when the main link fails be connected or active on the secondary link. The learning process of the back-off algorithm then exchanges update packages with interconnected neighbors. The next process is 10 seconds to receive traffic from a failed link. The failure transfer link to the process will not take time, can be interpreted as a 0-1 process, and there is no packet drop and loss on the link that performs the recovery process.

Keywords: *BFD, MPLS, Failover, Availability, VRF*

Merry Anggraeni, Hillman Akhyar Damanik

Ensemble Method Builds a Predictive by Integrating Several Models for Accurate Answer Prediction on Chatbot

Jurnal Penelitian Pos dan Informatika Vol. 11 No. 2, Page 0-0

ABSTRACT

Advances in machine learning algorithms that have a positive impact are Chatbots. A chat service which is actually a feature that has been very often used by tech-savvy people. But the difference is, the ones who reply in the chat process are robots or virtual characters. The chatbot will provide answers to the questions given to it which is basically the chatbot assigned to un-

derstand what context the user (user) means, then reply to it with the appropriate context. However, each context has a different input, human language has a very flexible way so that it is often found inaccuracies in the prediction of answers given by Chatbot. This could be due to the incorrect choice of algorithms for the classification of the context or the lack of training data provided. To overcome this, this study will focus on strengthening the prediction of chatbot answers with the method of the machine learning algorithm (Machine Learning) ensemble 5 classification method heterogeneously between basic classifiers and meta-algorithms and using maximum voting (Majority Vote) or Hard Voting on type ensemble. Classification is the process of finding a model or pattern that can describe and differentiate classes in a dataset. The goal is that the model can be used to predict objects with unknown class labels. It was found that the accuracy results were 86% for the data set with 6 classes, the avg Macro for each precision and recall was 92%, and the f1-score was 89%. Weighted avg for precision is 93% and each for recall and f1-score is 86%.

Keyword: Chatbot, Ensemble Technique, Text classification, Machine learning algorithm, meta-algorithm, answer prediction.

Karina Maryana, Sartika Djamaluddin

The Role of the Information and Communication Technology Sector in the Indonesian Economy

Jurnal Penelitian Pos dan Informatika Vol. 11 No. 2, Page 0-0

ABSTRACT

The contribution of ICTs to the overall production system in the economy is considered as one of the factors for growth and development of the national economy. The purpose of this research is to investigate the contribution of the ICT sectors to the Indonesian economy through the role of the ICT sectors in encouraging the growth of other sectors with linkage analysis, multiplier analysis and causative matrix analysis. Furthermore, this study investigates the sources of growth in the ICT sectors by decomposing the sources of change in its output. In particular, the input-output approach is adopted to describe the production activities and diffusion of the ICT sectors in the Indonesian economy for the period 2000-2014. The results show that apart from having large output multipliers, the ICT Manufacturing sector also encourages exports. The results of the decomposition show that the influence of the previous technology coefficient has a significant contribution to the output of the ICT sectors. However, these values have diminished in recent periods so that the role of the Indonesian ICT sectors as a GPT sector has become less than optimal

Keyword: decomposition, economic growth, ICT sector, input-output, linkages

Joey Leomanz Bartolomiussihosa, Agus Virgono, Ridha Muldina Negara

Baremetal Provisioning Performance Analysis of Openstack Platform Based on Remote Virtualization Using Ironic

Jurnal Penelitian Pos dan Informatika Vol. 11 No. 2, Page 0-0

ABSTRACT

The use of cloud computing is already quite a lot, even many are used to perform high-performance computing tasks. Cloud data centers rely on virtualization technology to increase productivity and reduce the complexity that will be provided to end-users in accessing the services provided. Applications that run using virtualization technology inevitably result in performance degradation. Consumer needs for high computing that cannot be done on virtualization technology can be solved by computing directly on baremetal but still at very low complexity. Openstack is represented as an open-source platform, popular as an Infrastructure as a Service (IaaS) cloud platform that can be implemented as a private cloud or public cloud. Openstack already supports virtualization and acquisition of baremetal. This research was conducted to test the performance between baremetal and virtual machines by doing several tests. Performance testing is based on infrastructure resources from cloud computing such as CPU processing time, network throughput TCP, disk I/O, memory test throughput, jitter, and packet loss. The test results obtained that, baremetal ironic performance is better than virtual machines.

Keywords : openstack, ironic, benchmarking, provisioning baremetal, virtualization

Hanna Pratiwi, Yulia Wahyuningsih, Yohana Christela Oktaviani

Design and Development Archipelago Architecture Learning Media Using QR Code Technology

Jurnal Penelitian Pos dan Informatika Vol. 11 No. 2, Page 0-0

ABSTRACT

In this digital era, almost all aspects of human life depend on technology, education, business, government, and even daily life. Along with the increasing advances in computer technology used for human interest, the science that supports it also

develops, one of which is the field of Human and Computer Interaction often called HCI. Input-related methods are essential to consider in HCI; one example of input is Quick Response Code (QR-Code) technology. QR-Code technology has been widely applied in teaching and learning, such as attendance models and foreign language learning media. In this research, we also use QR-code technology to introduce the culture of the architecture, especially about traditional houses in Indonesia combined with motor training through coloring activities. It is hoped that children will have no problem writing as they get older and help develop creativity. The method used in this research is the Human and Computer Interaction (HCI) test method focused on the design of the user's system so the implementation of the system can be carried out efficiently by taking into user needs. Based on research that has been done, QR-Code technology can be used to support learning media.

Keywords: Culture of the architecture, QR – Code, Motor, Human and Computer Interaction, Story Telling