



UNIVERSITAS BHAYANGKARA JAKARTA RAYA FAKULTAS ILMU KOMPUTER

Kampus I: Jl. Harsono RM No. 67, Ragunan, Pasar Minggu, Jakarta Selatan 12550

Telepon: (021) 27808121 – 27808882

Kampus II: Jl. Raya Perjuangan, Marga Mulya, Bekasi Utara, Jawa Barat, 17142

Telepon: (021) 88955882, Fax.: (021) 88955871

Web: fasilkom.ubharajaya.ac.id, E-mail: fasilkom@ubharajaya.ac.id

SURAT TUGAS

Nomor: ST/132/XII/2021/B-FASILKOM-UBJ

1. Dasar: Kalender Akademik Ubhara Jaya Tahun Akademik 2021/2022.
2. Dalam rangka mewujudkan Tri Dharma Perguruan Tinggi untuk Dosen di Universitas Bhayangkara Jakarta Raya maka dihimbau untuk melakukan Penelitian.
3. Sehubungan dengan hal tersebut di atas, maka Dekan Fakultas Ilmu Komputer Universitas Bhayangkara Jakarta Raya menugaskan:

NO.	NAMA	NIDN	JABATAN	KETERANGAN
1.	Prima Dina Atika, S.Kom., M.Kom.	0311037107	Dosen Tetap Prodi Informatika	Sebagai Penulis Pertama
2.	Herlawati, S.Si., M.M., M.Kom.	0311097302	Dosen Tetap Prodi Informatika	Sebagai Penulis Kedua
3.	Fata Nidaul Khasanah, S.Kom., M.Eng.	0327059202	Dosen Tetap Prodi Informatika	Sebagai Penulis Ketiga
4.	Rafika Sari, S.Si., M.Si.	0329098902	Dosen Tetap Prodi Informatika	Sebagai Penulis Keempat

Membuat Artikel Ilmiah dengan judul **“Sentiment Analysis of KAI Access Application Using The Deep Neural Network Method”** pada media *International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE)*, Vol. 10, Issue 12, Desember 2021, ISSN (O): 2278-1021, ISSN (P): 2319-5940.

4. Demikian penugasan ini agar dapat dilaksanakan dengan penuh rasa tanggung jawab.

Bekasi, 07 Desember 2021
DEKAN FAKULTAS ILMU KOMPUTER

Dr. Tyastuti Sri Lestari, S.Si., M.M.
NIP. 1408206



IJARCCCE

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

A monthly Peer-reviewed online and print journal

Microsoft Academic, Google Scholar and Mendeley Indexed Journal

DOI IJARCCCE/10.17148

www.ijarcce.com

DAFTAR ISI
**IJARCCCE - International Journal of Advanced Research
in Computer and Communication Engineering**

VOLUME 10, ISSUE 12, DECEMBER 2021

A Transformer-based Neural Model for Chinese Word Segmentation and Part-of-Speech Tagging

Xinxin Li

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101201

Predictive Analysis of Coronary Heart Disease (CHD) based on Machine Learning Classification Algorithm

Dillip Narayan Sahu, Vijay Pal Singh*

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101202

Wireless Communication on Scalable Channel Allocation and Access Scheduling for Wireless Internet-of-Things

Nalinakshi M, Dr B Narsimha

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101203

Detection of Crops, Fertilizers and Diseases Using Machine Learning

Raj Sunil Narlawar, Rahul Dinkar Thombre, Vishakha Vikas Thorat, Jyotsna Hanumant Tirkar, Prof. Priya Ujawe

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101204

SENTIMENT ANALYSIS OF KAI ACCESS APPLICATION USING THE DEEP NEURAL NETWORK METHOD

Prima Dina Atika, Herlawati, Fata Nidaul Khasanah, Rafika Sari

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101205

Application of Mathematical Model of Artificial Neural Network in PbO-doped SnO₂ Sensor for Detection of Methanol, CO and NO₂

Deepak Kumar Verma, Jitendra K. Srivastava, Bholey Nath Prasad, Chayan Kumar Mishra

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101206

DEVELOPING AN EFFECTIVE MODEL FOR THE SEMATIC SEGMENTATION OF REMOTE SENSING IMAGERY

Muazu Aminu Aliyu, Souley Boukari, Abdullahi Gamsha Madaki, Mustapha Lawal Abdulrahman

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101207

AN EFFICIENT KEYPOINT FEATURE EXTRACTION TECHNIQUES TO DETECT COPY MOVE IMAGE FORGERY

Mukala Gayatri, Ch. Srinivasa Rao

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101208

Predictive Analysis for the Detection of Diabetes Mellitus (DM) based on Machine Learning Classification Algorithm

Dillip Narayan Sahu, Vijay Pal Singh*

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101209

Predictive Analysis of Genetic Disease Haemophilia-A based on Machine Learning Classification Algorithm

Dillip Narayan Sahu, Vijay Pal Singh*

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101210

CENTRALIZATION ONLINE PORTAL FOR HEAD OF THE DEPARTMENT

Indhu.V, Vinothini.R

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101211

Speech Emotion Recognition in Machine Learning and IoT

Prathamesh Shinde, Sufiyan Gawandi, Atharva Baxi, Aman Pathan

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101212

Hit Song Predictor by scraping spotify.com, billboard.com and millionsongdataset.com

Kinjal Makwana, Priyanka Katore, Shrinivas Jawade, Tejas Dumane, Prof. Poonam Dhamal

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101213

COMPETITIVE ANXIETY BETWEEN CRICKET AND FOOTBALL PLAYERS

Dr. Satyajeet Pagare

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101214

A Survey on Covid-19 Analytical Timeline

Prof. S.R.Hiray, Omkar Dabholkar, Praveen Yadav, Akash Wagh

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101215

Fake News Detection Using Machine Learning

Prof. C. P. Lachake, Ritesh Paliwal, Akshay Patil, Tejas Chaudhari, Harshal Borse

Abstract |  PDF | DOI: 10.17148/DOI: IJARCCCE.2021.101216

Data Analysis of Covid-19 Outbreak and Providing Relief All Over the World

Mr. Prashant Verma, Mr. Anil Verma, Mr. Arvind Jaiswal

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101217

An Interactive Learning Platform by Providing Engagement and Entertainment

Prof. C. P. Lachake, Aniket Kale, Abbas Dahodwala, Rushab Vaza, Tejasvini Barapatre

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101218

MEDICAL CHATBOT USING MACHINE LEARNING

Prof.G.M.Kadam, Sangameshwar Swami, Harshal Songra, Nitin Patil, Suraj Karpe

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101219

Voting System Using Face Recognition and Fingerprint

Omkar Yadav, Tushar Vanjare, Hrishikesh Udgirkar, Balaji Chavan, Prof.Pournima Gaikwad

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101220

EFFECTS OF PHYSICAL FITNESS TRAINING PROGRAMMES ON HAPPINESS AND KINDNESS ASPECT OF VOLLEYBALL PLAYERS

Dr.VikramKunturwar, Dr. Sinku Kumar Singh

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101221

Crop Recommendation Using Machine Learning

Prof. P. D. Halle, Prashant Wagh, Mayur Chaudhari, Paresh Rajput, Aditi Kate

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101222

Heart Disease Prediction Using Machine Learning Algorithms and Models

Rahul Vashishta, Aditya Randive, Pallavi Gade, Gaurav Pardeshi

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101223

Sound Level Monitoring system

Nisha Pedsangi, Priyanka Phapale, Poorvi Pimpalkar

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101224

OPEN-SOURCE INTELLIGENCE TECHNIQUE(OSINT) SPIDER

Abhishek Mishra, Anish Bhowmick, Mehul Jain, Nimisha Jain, Dr. Sonal Sharma

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101225

Abnormal Event Detection in Videos Using Modified Spatio-Temporal Autoencoder

Darshan Nemade, Paras Thakur, Ulkesh More, Vaishali Chavhan

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101226

AUTOMATIC BRAIN TUMOR IDENTIFICATION

Prof. Vijay Kumar A, Nikhil N, Aswin Bharathi K B, Palukuri Suptha, Pranav J

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101227

Depression detection using Machine Learning and Deep Learning

Saish Patil, Om Mandhare, Shubham Chaudhari, Sanket Garde

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101228

SOCIAL NETWORKING SITE FOR COLLEGE

Aamrapali Wandhre, Aachal Gaikwad, Laxmi Yadav, Dhanshri Gupta, Anandi Pimplikar, Prof. Sunanda P. Khandait

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101229

Improving Medical Adherence Using Machine Learning Tools and Human Computer Interaction

Vinit Pandey, Dr. Amrita Singh, Dr. Prerna Tiwari

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101230

Recommendation System for Service Integration and Composition Based on Policy Evaluation and Detection

S.Tiroumal Mouroughane, G.Amirthayogam

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101231

New Optimization Techniques used in Robotics

Gurjeet Singh, V. K. Banga

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101232

LEAF DISEASE DETECTION USING DEEP LEARNING ALGORITHM

Shreya khandebharad, Chanchal sithafale, Komal Gadkari, Nayan Kshatriya, Prof.S.S.Chavan

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101233

A Study Paper on Machine Learning

Aishwarya P. Zope, Rashmi R. Chaudhari

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101234

A SURVEY ON LOAD BALANCE IN CLOUD COMPUTING USING MIN MIN ALGORITHM

Barot Hinal, Prof.Riddhi Patel

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101235

RFID Student ID Cards

Vivek Saste, Tejas Jagtap, Maaz Khan, Prof. N. Bogiri

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101236

SURVEY ON VIDEO CONFERENCING,HAND GESTURE RECOGNITION AND AIR WRITING

Deepak K.N, Anand Ramesh, Manu T.M., Suraj K.S., Vaishnavu M.V

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101237

Survey of AI Enabled Smart Agricultural Techniques

Dr. Sreeraj R., Akhilkumar K.S., Jaefer, Prayagdev E., Vishnu Murali

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101238

Robot For Serve Food and Medicines to Patients of Corona Virus in India

Prajakta Deshmukh, Snehal Bhagwat, Navnath Jogdand, Sanket Manjule, Prof. Sachine Date

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101240

UNDERGROUND AUTOMATIC PLANT WATER SUPPLY AND MONITORING SYSTEM

Kajal Ukey, Reshma Patle, Ruchatai Raut, Apurva Dethe, Pratiksha Waghmare, Prof.H.V.Gorewar

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101241

DDOS attack detection using machine learning in SDN

Rashmi Parikh, Prof. Pratik Modi

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101242

Design Implementation of SRAM cell Based on Low Power Consumption Technique

Kunal Geed , Prof. Amit Thakur

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101243

SURVEY ON ASD PARENT'S HELPMATE

Anaghalakshmi K J ,Anekha P D , Rajha K T, Vismaya P V, Muneeba Mohyiddeen

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101244

SURVEY ON PALLIATIVE CAR

Najla Nazar, Adarsh A S, Fathima Kauzar N A, Gana Mol V G, Niranjana T R

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101245

Aishwarya Divan, Prof. Riddhi Patel

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101246

SURVEY ON TRAFFIC SIGN RECOGNITION, CNN AND SVM

Sneha George, Ayana Sudhan, Jeleetta Shajan, Sreelakshmy A R, Jerit Richa Joy

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101247

A Survey on Tool Tracking System

Darvish Davis, Anandhu Kumar, Alen Jhonson

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101248

SURVEY ON CHRONIC KIDNEY DISEASE PREDICTION SYSTEM

Deepak K.N, Adhwaidh P.S, Akshay P.D, Athira K.S, Jisna Jayan

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101249

SURVEY ON SIGN LANGUAGE TRANSLATOR

Minnuja Shelly, Krishnapriya Sadhasivan, Risala K.M, Shasna P.A, Sunhath K.A

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101250

A SEMI AUTOMATIC TRANSFORMATIONAL TECHNIQUE FOR TRANSFORMING SINGLE THREADED PROGRAM INTO MULTI THREADED PROGRAM

Vinay T R, Ajeet A Chikkamannur

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101251

EEG Analysis for BCI and Epilepsy Detection

Chetana R, Mahantesh K, Channabasava

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101252

SURVEY ON DIGITAL MARKETING FOR OFFLINE MARKET

Chinju Poulose, Devind M Manoj, Akash N, Abhinav Bose, Krishna Prasad

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101253

Survey of Speech to Sign Translator

Nighila Ashok, Aswin K S, Nikhil Babu P, Sajith Suresh, Sharun K Suresh

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101254

Survey on Drive Assist in VANET

Nitha C Velayudhan, Aiswarya R.H, Ashiq P.A, Fathima Hareef, Safwana K.S

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101255

ALGOVIZ: VISUALIZE SORTING AND PATHFINDING ALGORITHMS

Prince Gupta, Sahaj Dhawan, Divya Soni

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101256

A RASPBERRY PI NETWORK SCANNER & CLOUD STORAGE

Timothy Sewe Ogede, M. Bhavana, P. Ananya, Dr. Vijay Kumar

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101257

REVIEW ON INTELLIGENT SURVILLANCE SYSTEM

Ms. Chinju Poulose, Ashlin Francis Pereira, Sushith K S, Sreekumar CM, Yadhukrishna K Suresh

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101258

Wall-et PWA Crypto Wallet

Aditya Sachin Patil, Vaibhav Singh Rawat, Haresh Raju Kaneshan, Yashita Agarwal, Dr. Sonal Sharma

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101259

SURVEY ON AUDIO SOURCE SEPARATION AND NOTE PROCESSING ALONG WITH EDUCATION

Minnuja Shelly, Safrin, Shreethal Janardhanan, Shuhaib P M, Gopika T G

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101260

Melanoma classification using

V. Vinoth Kumar, B. Yasaswi, I. Vandana, C. Sai Joshna, N. Mounika

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101261

SURVEY ON ONLINE DONATION SYSTEM

Najla Nazar, Baseem, Kevin Raju, Mohammed Jasim, Ramseen A M

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101262

HOME AUTOMATION SOLUTION USING NODE-RED AND MQTT

Shubham Gupta, Saurav, Vidit Patira, Nishant Jain, Dr. Vijay Kumar

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101263

Review of Compiler Structure and Processing in Compiler Design

Barkha Gupta

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101264

Detection of Counterfeit Currency of Rs.2000 and Rs.500 using MATLAB

Tanaya Deshpande, Prachi Puram, Sakshi Bondre, Sayli Khodankar, Kajal Khodankar, Virendra Yadav

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101265

Prior Stage Kidney Disease Prediction Using AI & Supervised Machine Learning Techniques

Barot mitisha, prof. barkha bhavsar

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101266

Eliminating Creation of Fake Profile in Social Networks by using National Identification Number

Prof. Himanshu Taiwade, Aman Yerwarkar, Gaurav Sewatkar, Mayur Mandape, Milind Patle, Sagar Koli

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101267

Predictive Analysis of Chronic Kidney Disease (CKD) based on Machine Learning Classification Algorithm

Dillip Narayan Sahu, Vijay Pal Singh*

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101268

DDA Line Drawing Algorithm

Mrs. Pournima Abhishek Kamble, Mrs. Sujata Shankar Gawade

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101269

Multikeyword Searching Over Encrypted Data With Privacy Preserving

Mrs.Vijaya Sayaji Chavan, Mr.Mohan Kashinath Mali

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101270

Data Manipulation Language Commands

Swati Bhushan Patil, Rahul Uttam Patil

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101271

Twitter-Cyberbullying Detection using Machine Learning

Namrata Khade, Snehal Sarkate, Palak Kombade, Vaishnavi Alone, Vaishnavi Parate

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101272

Review Article on Image Captioning

Harsh Mehta, Vipul Jain, Shivani Patel, Kriti Banthia, Jitender Jaiswal

Abstract |  PDF | DOI: 10.17148/IJARCCCE.2021.101273

Editorial Board Members

Executive Advisory Board	Reviewers Board
<p>Professor Subramaniam Ganesan</p> <p>Department of Electrical and Computer Engineering, Oakland University, Rochester MI 48309, USA.</p> <p>Dr. Le Quan Ha</p> <p>School of Electronics, Electrical Engineering and Computer Science, Queen's University Belfast, Belfast, UK.</p> <p>Xiang-Fang Yu</p> <p>University of Chinese Academy of Sciences, Beijing, China.</p> <p>Dr. Randy R. Koon Koon</p> <p>Faculty of Science & Technology, University of the West Indies, Jamaica, West Indies.</p>	<p>Radi Romansky</p> <p>Department of Electronics, Computer Systems and Technologies, College of Energy and Electronics at Technical University of Sofia, Sofia, Bulgaria.</p> <p>John Joel F. Martinez</p> <p>College of Engineering and Architecture –Electronics Engineering, Technological Institute of the Philippines, Quezon City, Philippines.</p> <p>Jeong Phil Lee</p> <p>Subdivision of New & Renewable Electricity, Kyungnam College of Inform. & Tech., Busan, Korea.</p> <p>Yaremenko Artem</p> <p>Power Supply Department, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kiev, Ukraine.</p>

Marleen Huysman

Department of Information Systems, Logistics and Innovation, Vrije Universiteit Amsterdam, De Boelelaan, Amsterdam, The Netherlands.

Ivelisse Teresa Machín Torres

Professor, Technical Department, José Martí University, Sancti Spiritus, Cuba.

E. Marquez

Departamento de Física de la Materia Condensada, Facultad de Ciencias, Universidad de Cadiz, Cadiz, Spain.

Ljiljana Ivanković

University of Applied Sciences Velika Gorica, Velika Gorica, Croatia.

Georgios Konstantinou

Special Scientist FOSS Research Centre for Sustainable Energy, PV Technology, University of Cyprus, Nicosia, Cyprus.

Đỗ Đình Thanh

Faculty of Information Technology, Ho Chi Minh University of Foreign Languages and Information Technology (HUFLIT), Vietnam.

Vinod A Prasad

Associate Professor, School of Computer Science and Engineering, Nanyang Technological University (NTU) Singapore.

Myo Myint Maw

Lecturer, Department of Computer Engineering and Information Technology, Mandalay Technological University, Mandalay, Myanmar.

Michael Kimwele

Dr., School of Computing & Information Technology, Jomo Kenyatta University of Agriculture & Technology, Nairobi, Kenya.

Jose A. Noh

Facultad de Matemáticas, Universidad Autónoma de Yucatán, Tizimín, México.

Indrasen Poola

Data Scientist & Artificial Intelligence – Industry Consultant, California, USA.

Prof. Hsiu-fei Sophie Lee

Department of Special Education, National Taitung University, Taiwan.

Dr. G.Sadashivappa

Dept of Telecommunication Engineering, R.V.College of Engineering, Bangalore.

Dr. Redahegn Sileshi

University of North Georgia, Oakwood, Georgia, USA.

Dr. Adnan Al-Rabea

Department of Information Technology, Albalqa Applied University, Salt, Jordan.

Dr. Adrian Nicolae Branga

Department of Mathematics and Informatics, Lucian Blaga University of Sibiu, Romania.

Dr. Magdy Shayboub A. Mahmoud

Faculty of Computers and Informatics, Suez Canal University, Egypt.

Kinnal Dhameliya

Electronics Engineer, Innovative electronics Corp. 750 Trumbull Drive Pittsburgh.

Dr. Ali El-Moursy

Department of Electrical & Computer Engineering, University of Sharjah, United Arab Emirates.

Dr. Aeizal Azman Abdul Wahab

School of Electrical & Electronic Engineering, Universiti Sains Malaysia (USM), Malaysia.

Mohammad Houssein Ghosn

Professor, Lebanese International University, Department of Computer Science, Beirut, Lebanon.

Dr. Tolga ENSARİ

Computer Engineering, Istanbul University, Istanbul, Turkey.

Dr. Mohd Fadzli Mohd Salleh

School of Electrical & Electronic Engineering, Universiti Sains Malaysia, Malaysia.

Dr. Mohd Fadzli Mohd Salleh

School of Electrical & Electronic Engineering, Universiti Sains Malaysia, Malaysia.

Dr. Mohamed Abd El-Basset Matwalli

Faculty of Computers and Informatics, Zagazig University, Egypt.

Dr. Aeizal Azman Abdul Wahab

Faculty of Computers and Informatics, Zagazig University, Egypt

Dean M Aslam, Ph.D., Professor

Professor & Member of National Academy of Inventors (NAI),
Director of BIOMEMS and Mind Laboratory, Electrical and Computer Engineering,
Michigan State University, East Lansing, MI 48824 USA.

Prof. Dr.Ushaa Eswaran, B.E., M.E.,PhD.,

Professor & Dean, Department of ECE, Infant Jesus College of Engineering, Keela Vallanadu, Tamil Nadu, India.

S.A. Edalatpanah

Department of Applied Mathematics, Islamic Azad University of Lahijan, Iran.

Timucin BARDAK, Ph.D.,

Bartın Vocational School, Bartın University, Bartın – Turkey.

Karunya University, Coimbatore.

Wenzhu Yang

Professor, School of Cyber Security and Computer, Hebei University, Baoding, China.

Dr Jayanti goyal

Head, Computer Department, Kanoria Girls PG College Jaipur, Rajasthan.

Michael Kimwele

Dr., School of Computing & Information Technology, Jomo Kenyatta University of Agriculture & Technology, Nairobi, Kenya.

Dr. Elsanosy M. Elamin

Dept. of Electrical Engineering, Faculty of Engineering, University of Kordofan, Sudan.

Dr.Dhirendra Sharma

Chief Information Security Officer (CISO), Sr. Faculty IT, UIIT Himachal Pradesh University, Shimla.

Professor Deepika D Pai

Department of Electronics and Communication, Vemana Institute of Technology, Koramangala, Bangalore.

Georgi Tsochev

Faculty of Computer Systems and Technology, Technical University of Sofia, Sofia, Bulgaria .

Dr. Jitesh Neve

Computer Science and Engineering, University of Swahili, Republic of Panama
Module Lead, Persistent System Limited, Pune.

W. A. Muse

Obafemi Awolowo University, Ile-Ife, Nigeria.

Prof.(Dr.) Vijay Singh Rathore

Department of Computer Science,S.R.R.Govt.Arts & Science College, Karimnagar, Telangana.

Janani.B

Professor, Department of CSE, Adithya Institute of Technology, Coimbatore.

Dr.S.Nagaprasad

Professor & Head, CSE, JECRC, Jaipur Engineering College & Research Centre, Jaipur.

Sile Wang

Lecturer, School of Cyber Security and Computer, Hebei University, Baoding, China.

Shearyl U. Arenas

College of Engineering and Architecture – Electronics Engineering, Technological Institute of the Philippines, Quezon City, Philippines.

Dr. S.Rakoth Kandan, M.Tech., Ph.D.,

Professor, Department of CSE, Jayamukhi Institute of Technological Sciences, Warangal, Telangana.

Slavcho Chungurski

Associate Professor, UTMS University, Skopje, Macedonia
Information Security Management Expert, Cabinet of Deputy Prime Minister of the Republic of Macedonia.

Dr D.Durga Prasad, Ph.D.,

Professor, Dept of CSE, PSCMR College of Engg., & Tech, Vijayawada

Dr Mohd Uruj Jaleel

Assistant Professor, College of Computing & Informatics, Saudi Electronic University, Riyadh (KSA)

Mr. R.D.Sivakumar

Assistant Professor, Department of Computer Science, Ayya Nadar Janaki Ammal College, Sivakasi

Dr. Shahzad Ashraf

Assistant Professor, Hohai University Changzhou, China

Dr. Jayeshkumar Natwarlal Modi

Assistant Professor, Computer Science, HNG University, Patan



SENTIMENT ANALYSIS OF KAI ACCESS APPLICATION USING THE DEEP NEURAL NETWORK METHOD

Prima Dina Atika¹, Herlawati², Fata Nidaul Khasanah³, Rafika Sari⁴

Informatics, Department, Bhayangkara Jakarta Raya University, Jakarta, Indonesia¹⁻⁴

Abstract: self-attention Fire mode of transportation is a mode of transportation that can overcome traffic jams. The mode of transportation in Indonesia is managed by PT Kereta Api Indonesia (KAI). From day PT KAI always improves services to the community. To know how much people comment positively and negatively, a sentiment analysis is carried out against PT KAI. By retrieving data by scraping from the page Google Play website. The data obtained is data from the Google Play website database which has as many as 600 comments in the form of user reviews of KAI Access. From review KAI Access users are classified using a deep neural network. Expected From the results of this sentiment analysis, it will improve PT KAI's services

Keywords: Sentiment Analysis, CNN, PT KAI, Google play

I. INTRODUCTION

Along with the development of the number of vehicles that are not followed by developments a significant number of roads causing traffic jams. Public transportation is one solution to overcome the problems above. The public transport system user-friendliness is needed by the community, namely trains. The train is one of the oldest modes of transportation in the world, has various comparative and competitive advantages, can save money land and energy, have less pollution, have good properties, and adapt with changes in technology. Previously, several studies have been conducted to analyse sentiment towards Indonesian Railways Like the Naïve Bayes Classifier (NBC) method that achieves accuracy by 84%. Sentiment analysis is also applied to motorcycle taxi services online using the Support Vector Machine (SVM) algorithm with an accuracy value of 76%. The Logistics Regression Algorithm has also been successfully used to analysis of customer sentiment in banking services with an accuracy of 99.3% [1].

One of the classification algorithms that is often used and gets a lot of attention researchers are nave bayes classifier, simplicity in nave bayes algorithm that makes the algorithm has the attractiveness to be implemented in a variety of applications application, but the weakness faced by this algorithm is the length of time and the level of prediction accuracy used to make predictions[2]. The Support Vector Machine algorithm has advantages in showing performance which is very good for time series prediction [3]SVM method not produce accurate results when many features are irrelevant, not all features needed in the process [3] Logistic Regression is a linear classification which has been shown to produce a powerful classification with probability statistics and deal with multiclass classification problems. Big problem experienced by the Logistics Regression algorithm is the class imbalance (Class Balance) on high-dimensional datasets .Therefore, this study tries to apply a deep neural network for sentiment analysis contained in the KAI Access application on the Google Playstore platform, to find out response from users to the KAI Access application. The purpose of this research is to know the analysis of some sentiment data that can be used to predict the number of negative and positive reviews related to the KAI Access application using Deep Neural Network method.

Convolutional Neural Network is a Multi Layer Perceptron (MLP) development method designed to process two-dimensional data. CNN is included in the type of Deep Neural Network because of the depth of the network level and is widely implemented in image data. CNN has two methods; namely the classification using feedforward and the learning stage using backpropagation. The way CNN works is similar to MLP, but in CNN each neuron is represented in two dimensions, unlike MLP where each neuron is only one size. dimensions [4] Sentiment analysis research by entering behavioural information user from [5] entitled 'Twitter Sentiment Analysis with a Deep Neural Network: An Enhanced Approach using User Behavioral Information'. This study applies the Convolutional Neural Network algorithm from the SemEval-2016 1 and SemEval-2016 2 datasets. Classical machine learning methods such as Support Vector Machine, Naïve Bayes, K-Nearest Neighbor, J48 is used for comparison of CNN algorithm. The results obtained by the CNN algorithm show consistently good performance in both datasets so that the resulting accuracy is more consistent.

Sentiment analysis based on Word2Vec was carried out by [6] in a study entitled 'Sentiment Analysis of Indonesian Twitter Based on Word2vec Using Deep Convolutional Neural Networks'. This study uses the Word2Vec model for Indonesian as a vector representation of words. Using Word2Vec also speeds up the training process and improves the accuracy of the Deep Convolutional Neural Network algorithm. The results of the experiments that have been carried out



have resulted in an accuracy of 76.40%. The purpose of this study is to find out the analysis of some sentiment data that can be used to predict the number of negative and positive reviews related to the KAI Access application using the Deep Neural Network method.

II. RESEARCH METHODOLOGY

The main problem in the classification of sentiments is how to identify sentiments in a text, whether the text has positive or negative sentiments[7]. Figure 1 is the flow applied in this study. The first step is retrieval of data or crawling data from twitter, then all data is labelled into two classes, positive and negative. The next step is preprocessing using NLP techniques. The results of pre-processing in the form of tokens will be input to the classification process. The classification process uses a deep learning approach with the Convolution Neural Network (CNN) algorithm. Figure 1. Research Steps.

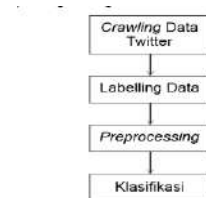


Figure 1. CNN Classification Stages

2.1. Crawling Data

The data is taken from the KAI web using the Python programming language, with the . A total of 1000 data were selected with search keywords including "PT KAI", "service", "application" from the KAI website.

2.2. Labelling data

Labelling the dataset is done manually with the help of experts. Data are labelled positive and negative. From the labelling results, there were 658 data with negative sentiment and 242 data with positive sentiment.

2.3 Pre-processing

The data obtained from Twitter are generally in the form of unstructured sentences such as non-alphanumeric characters, url links, irregular grammar, etc. The presence of noise and data irregularity affects the performance of the machine [14]. Pre-processing NLP is a step to remove unwanted noise from the Twitter dataset [15], so that the resulting data becomes more structured.

2.3.1 Stop word Removal

stop word is a step to eliminate words that have no effect/uninformative but often appear in documents such as url links, hashtags, usernames, punctuation marks and non-alphanumeric characters (except spaces) such as ! @ # \$ & % dI. Removal via python's regular expression library.

2.3.2 Tokenization

A process of cutting or parsing text into words. The result of this process is called token [20].

III. RESULT AND DISCUSSION

3.1 Building a CNN Model

Below is the python coding for building CNN by defining the embedding layer vocal size = 100, CNN 12 model with activation is Relu and using global MAXPOOLING to produce the CNN model in Figure 2.

```

embedding_layer = Embedding(vocab_size, 100, weights=[embedding_matrix], input_length=maxlen, trainable=False)
model.add(embedding_layer)
model.add(Conv1D(128, 5, activation='relu'))
model.add(GlobalMaxPooling1D())
model.add(Dense(1, activation='sigmoid'))
  
```

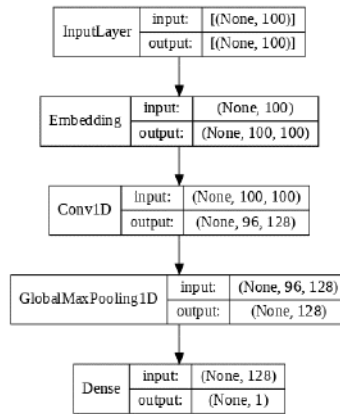



Figure 2. CNN Model

3.2 Testing Model

At this stage, a training model is carried out which aims to test the model on the training data with parameters for each model that has been made. Based on the parameter testing that has been tried, the model with the best parameter values is the CNN-LSTM model. Model testing produces accuracy and loss values in training and validation data. The training process uses 10 epochs and 128 batch sizes. With the parameters that have been determined, it will be seen how accurate the training data is and see the lowest loss value. The model will store the optimal epoch at the lowest loss value during the epoch process. The following are the results of model testing can be seen in Figure 3.

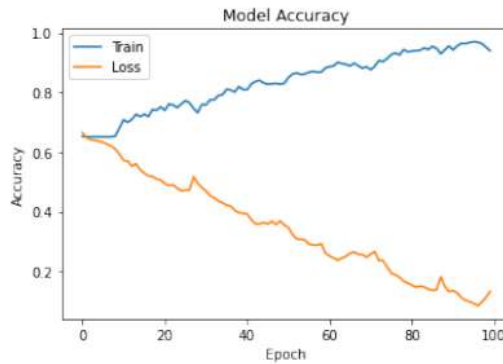


Figure 3. CNN and LSTM accuracy models

Based on Figure 3, the best test results are shown in Figure 2. The CNN-LSTM model produces the lowest accuracy value in the first epoch validation data with a value of 0.8686 and the highest loss value in the training data produces 0.762. In epoch 1, the CNN-LSTM model produces good accuracy compared to other models. The comparison shows that the model is quite good by showing that the accuracy of the training data with validation is not much different so that it does not experience overfitting. Furthermore, the reliability of the model will be tested at the testing stage with data testing.

3.3 Testing process

This stage is the stage of testing the model with data testing. The data to be tested are 300 article titles with the number of labels in the negative class, 658 article titles, 242 titles in the positive class. Furthermore, after the model produces its predictions in each class, the confidence level of the model is calculated by looking at accuracy, precision and recall. The goal is to find out how reliable the model is in predicting the class. The results of testing data testing are shown by a confusion matrix as shown in the table below. Table 1 shows the results of the Confusion Matrix.

Table 1. Results of the Confusion Matrix

Actual	Prediction	
	Negative	Positive
Negative	33	102
Positive	45	120



Based on the model that has been made where the test data labelled as negative is predicted to be negative at 33 and correctly predicts 102 and the actual positive one predicts 45. Furthermore, after the model produces its predictions in each class, the confidence level of the model is calculated by looking at the accuracy, precision and recalls. The goal is to find out how much the percentage of accuracy can be trusted as a model in predicting class. Figure 4 to see accuracy, precision, recall.

	precision	recall	f1-score	support
0	1.00	0.08	0.16	201
1	0.00	0.00	0.00	0
2	0.00	0.00	0.00	0
3	0.00	0.00	0.00	0
4	0.00	0.00	0.00	0
5	0.00	0.00	0.00	0
6	0.00	0.00	0.00	0
7	0.00	0.00	0.00	0
8	0.00	0.00	0.00	0
9	0.00	0.00	0.00	0
10	0.00	0.00	0.00	0
11	0.00	0.00	0.00	0
12	0.00	0.00	0.00	0
13	0.00	0.00	0.00	0
14	0.00	0.00	0.00	0
15	0.00	0.00	0.00	0
16	0.00	0.00	0.00	0
17	0.00	0.00	0.00	0
18	0.00	0.00	0.00	0
19	0.00	0.00	0.00	0
20	0.00	0.00	0.00	0
21	0.00	0.00	0.00	0
22	0.00	0.00	0.00	0
23	0.00	0.00	0.00	0
26	0.00	0.00	0.00	0
28	0.00	0.00	0.00	0
30	0.00	0.00	0.00	0
31	0.00	0.00	0.00	0
34	0.00	0.00	0.00	0
35	0.00	0.00	0.00	0
37	0.00	0.00	0.00	0
59	0.00	0.00	0.00	0
77	0.00	0.00	0.00	0
accuracy			0.08	201
macro avg	0.03	0.00	0.00	201
weighted avg	1.00	0.08	0.16	201

Figure 4. Accuracy, precision, Recall

IV. CONCLUSION

After going through the stage of testing the level of performance with the parameters of accuracy, precision, recall on the CNN model in determining sentiment analysis, predictions of using the KAI application, the conclusions include:

1. The CNN-LSTM accuracy value is 0.08
2. The highest recall value for CNN model is 0.08
3. The highest model CNN Precision Value 1.0

REFERENCES

- [1] E. dwi nurindah Sari, "Analisis Sentimen Nasabah Pada Layanan Perbankan Menggunakan Metode Regresi Logistik Biner, Naïve Bayes Classifier (NBC), dan Support Vector Machine (SVM)," J. Sains Dan Seni Its, vol. 8, no. 2, p. 177, 2019.
- [2] T. Rosandy, "PERBANDINGAN METODE NAIVE BAYES CLASSIFIER DENGAN METODE DECISION TREE (C4.5) UNTUK MENGANALISA KELANCARAN PEMBIAYAAN (Study Kasus : KSPPS / BMT AL-FADHILA)," J. Teknol. Inf. Magister Darmajaya, vol. 2, no. 01, pp. 52–62, 2016.
- [3] I. C. R. Drajana, "Metode Support Vector Machine Dan Forward Selection Prediksi Pembayaran Pembelian Bahan Baku Kopra," Ilk. J. Ilm., vol. 9, no. 2, pp. 116–123, 2017, doi: 10.33096/ilkom.v9i2.134.116-123.
- [4] R. A. Solovyev et al., "Deep Learning Approaches for Understanding Simple Speech Commands," 2020 IEEE 40th Int. Conf. Electron. Nanotechnology, ELNANO 2020 - Proc., pp. 688–693, 2020, doi: 10.1109/ELNANO50318.2020.9088863.
- [5] A. S. M. Alharbi and E. de Doncker, "Twitter sentiment analysis with a deep neural network: An enhanced approach using user behavioral information," Cogn. Syst. Res., vol. 54, pp. 50–61, 2019, doi: 10.1016/j.cogsys.2018.10.001.
- [6] Sartini, Analisis Sentimen Twitter Bahasa Indonesia Menggunakan Algoritma Convolutional Neural Network. 2020.
- [7] B. Liu, "Sentiment analysis and subjectivity," Handb. Nat. Lang. Process. Second Ed., no. January 2010, pp. 627–666, 2010.



International Journal of Advanced Research in Computer and Communication Engineering

ISSN Online 2278-1021
ISSN Print 2319-9540
Since 2012

A monthly peer-reviewed online and print journal

- Home
- About
- Authors
- * Fee
- Reviewers
- Topics
- Peer Review
- Ethics
- Policies
- Indexing
- FAQ's
- Contact

Downloads

- Paper Format
- Copyright
- Check My Paper Status
- Publication Fee

Author Center

Why Publish in IJARCCCE
Benefits to Authors

Indexing

Journal Title: International Journal of Advanced Research in Computer and Communication Engineering (IJARCCCE)

Organization: Tejass Publishers

IJARCCCE is indexed by the following top-ranking and our related sites



Pars Magazine Directory



← → ↻ ijarccce.com/indexing/

Frequency Asked Questions

IJARCCCE Management

- Aims and Scope
- Call for Papers
- Editorial Board
- Publication Ethics
- Subscription
- Librarian
- Conference Special Issue

Archives

- 2022 >
- 2021 >
- 2020 >
- 2019 >
- 2018 >
- 2017 >
- 2016 >
- 2015 >
- 2014 >
- 2013 >
- 2012 >

- PCON-2019
- NCAIT-17
- nCORETech-17
- NCRIC-17
- ICACTRP 2017
- ICITCSA 2017
- NCDSPICE-16
- SITES-16
- ICRITCSA-16
- NCORETECH-16
- ICRTCC

Information

IJARCCCE - Online and Print Version

Indexed by Google Scholar

Dear Professors, Researchers and Scientists, the research articles, ...



Open access



CERTIFICATE OF PUBLICATION

PRIMA DINA ATIKA

Informatics, Department, Bhayangkara Jakarta Raya University, Jakarta, Indonesia

Published a paper entitled

**SENTIMENT ANALYSIS OF KAI ACCESS APPLICATION
USING THE DEEP NEURAL NETWORK METHOD**

Volume 10, Issue 12, December 2021

DOI: [10.17148/IJARCCCE.2021.101205](https://doi.org/10.17148/IJARCCCE.2021.101205)

Certificate#: IJARCCCE/2021/4-1

SENTIMENT ANALYSIS OF KAI ACCESS APPLICATION USING THE DEEP NEURAL NETWORK METHOD

ORIGINALITY REPORT

19%

SIMILARITY INDEX

14%

INTERNET SOURCES

16%

PUBLICATIONS

%

STUDENT PAPERS

PRIMARY SOURCES

1	www.polgan.ac.id Internet Source	4%
2	www.ijert.org Internet Source	3%
3	repository.unika.ac.id Internet Source	2%
4	Koushik Paul, Sayandeep Paik, Siddhartha Kuri, Soumyadip Majumder, Avijit Kumar Chaudhuri. "A Novel Intrusion Detection System Using Multiple Linear Regression", international journal of engineering technology and management sciences, 2023 Publication	2%
5	Kusum, Supriya P. Panda. "Sentiment Analysis on Tweets with Deep Learning and Natural Language Processing", 2022 International Conference on Machine Learning, Big Data, Cloud and Parallel Computing (COM-IT-CON), 2022 Publication	1%