

JOURNAL OF COMPUTATIONAL INNOVATIONS AND ENGINEERING APPLICATIONS

Volume 7 Number 2
JANUARY 2023

The **Journal of Computational Innovations and Engineering Applications (JCIEA)** is a peer-reviewed, open access journal of De La Salle University, Manila. The JCIEA aims to promote the development of new and creative ideas on the use of technology in solving different problems in different fields of our daily lives. The JCIEA solicits high quality papers containing original contributions in all areas of theory and applications of Engineering and Computing including but not limited to: Computational Applications, Computational Intelligence, Electronics and Information and Communications Technology (ICT), Manufacturing Engineering, Energy and Environment, Robotics, Control and Automation, and all their related fields. The JCIEA editorial board is comprised of experts from around the world who are proactively pushing for the development of research in these fields.

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ISSN 2507-9174

Published and distributed by
De La Salle University Publishing House
2401 Taft Avenue, 0922 Manila, Philippines
Telefax No. (+63 2) 8523-4281
Email: dlsupublishinghouse@dlsu.edu.ph
Website: <https://www.dlsu.edu.ph/research/publishing-house/journals/jciea/>

The De La Salle University Publishing House is the publications office of De La Salle University, Manila, Philippines.

Annual Subscription Rates: Foreign libraries and institutions: US\$60 (airmail). Individuals: US\$50 (airmail). Philippine domestic subscription rates for libraries and institutions: Php1,800, individuals: Php1,500. Please contact Ms. Joanne Castañares for subscription details: telefax: (632) 523-4281, e-mail: joanne.castanares@dlsu.edu.ph.

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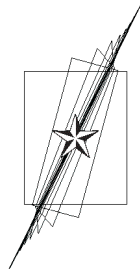
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From the Editor

The Journal of Computational Innovations and Engineering Applications (JCIEA) is a peer-reviewed and abstracted journal published twice a year by De La Salle University, Manila, Philippines. JCIEA aims to promote and facilitate the dissemination of quality research outputs that can push for the growth of the nation's research productivity. It is currently listed in the Andrew Gonzalez Philippine Citation Index. In its seventh volume, second issue, seven (7) articles were selected to provide valuable references for researchers and practitioners in the field of environmental engineering, air quality monitoring, agricultural crop health assessment, healthcare engineering, assistive systems, machine learning, computer vision, video processing, wireless systems, motor controller for electric vehicles, and robotic systems.

The first article is "*Precision Aquaculture Innovation Ecosystem Case Study*". This study assessed the current researches in precision aquaculture that are being done in the Philippines. The use of emerging technologies such as Internet of Things (IoT) are being looked into the utilization in the aquaculture. Moreover, this study identifies significant challenges and proposes solutions, such as funding mechanisms and governmental support, to drive innovation and meet industry needs. As the final conclusion of the researchers, they have proposed some recommendations for the policy adoptions to make a competitive researches and optimal benefits in aquaculture.

The second article is "*Optimization of Proportional-Integral-Derivative Controller Variations for an Enclosure Humidity Regulation System to Avoid Excessive Bacterial Growth*". The researchers designed a simpler method of optimizing said PID controller for the purpose of adjusting the parameters such as temperature or humidity. The code created takes a transfer function coefficient input from a user, a PID controller coefficient input, an input of desired output, and use all these to be able to optimize a system. To do this, a MATLAB Simulink program is created to take inputs and produce desired results. The optimal parameters for maintaining consistent humidity levels were determined. Additionally, the simulations aided in providing observations on the system's behavior in different conditions.

The third article is "*Integration of PID Controllers in Automated Water Irrigation Systems*". Advancement in the irrigation system is a must to have in the Philippines as majority of land is agricultural. This paper presents a secondary PID tuning method designed to produce an improved PID tuning method that produces less average steady-state error. This tuning method implies an accelerated convergence that theoretically facilitates a progressively stabilized system.

The fourth article is "*Application of Green Engineering Towards Sustainable Development in Sub Urban Areas in Luzon*". Green Engineering design must be promoted to attain sustainable development. This research is concentrated on examining specific suburban areas as part of the city's sustainable development initiatives, which

involve leading projects employing green engineering solutions. Two cases were presented, one was located at Santa Rosa, Laguna, and the other one was located at Canaman, Camarines Sur. As a recommendation, a more aggressive policy towards providing incentives for establishments with certification for green buildings was advised. Even though the city has a master plan for a bicycle lane to promote alternative modes of transport, it is also advised to come up with a more reliable public transport system. Overall, it is imperative for the national government to address the specific underlying issues identified in suburban areas such as Santa Rosa, Laguna, and Canaman, Camarines Sur.

The fifth article is “*Food Delivery Services in the New Normal: A Comparative Analysis of the Different Service Providers in the Philippines*”. This study deals with the food delivery services in the new normal of the 3 key popular players of the industry in the Philippines – Grab Food, Food Panda, and Angkas Food. It compares their respective overall business strategy and other important parameters in delivering the services. It developed a solid framework to bridge the gap between the different frameworks and business strategies of each player. To do the comparison and analysis, it uses qualitative research methods and secondary data with the descriptive and cross-sectional type of research to compare the variables used. The study shows that there were 4 aspects that need to be improved to make the services more efficient and reliable, especially in this pandemic situation. Those were delivery time, payment facility, food security, and handling of delivery personnel behavior.

The sixth article is “*A Hybrid Algorithm Based on Computational Intelligence Methods for Adaptive House Energy Management System*”. This paper proposed a two-stage energy management system for domestic house applications. The first step is a long-term plan, which is related to reducing energy consumption by effectively replacing equipment. In this way, a two-objective function optimization model is defined which benefits from an economic efficiency index. Also, a game theory model is utilized to consider the investor’s idea which appears as a flexible coefficient to tune allotment capital of different appliances categories. The second step is the short term one, being linked to optimal and adaptive scheduling of appliances and is defined as a multi-objective function model with some fuzzy coefficient and owner comfort factors. This tool is essential for enabling customers to respond to real-time electricity prices and indicates various potentials for reducing energy consumption. In long term and short term parts, separate specific scenarios are simulated which reflect 45.56% and 60.96% of energy consumption reduction, respectively.

The seventh article is “*Inverse Kinematics of a Two-Link 2D Planar Robot Arm for Industrial Assembly*”. This is one of the significant challenge in robotics. This study derived formulae for inverse kinematic movement by using geometric and trigonometric concepts. The study then coded and used MATLAB to simulate inverse kinematics for a two-link planar robot arm control system. The robot arm can position its end-effector in a two-dimensional plane using its two revolute joints. MATLAB determines the necessary joint angles for moving the end-effector to the required location after receiving input from the user specifying the link lengths and the intended end-effector position. It then creates a graphic representation of the robot arm showing the joints’ positions. The outcomes of this investigation effectively showcased the utilization of inverse kinematics to achieve motion control in a two-dimensional, two-linked robot arm, employing the established mathematical formulas.

Original research outputs are most welcome to JCIEA. There is no publication fee in this journal, and the research papers are assured of fair and fast peer review process. For further information, please visit www.dlsu.edu.ph/offices/publishinghouse/journals.asp.

Prof. Elmer P. Dadios, PhD
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