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# PROCEEDINGS OF JOHOR INTERNATIONAL INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2024 (JIICaS 2024)



*“Flourish and Nurturing Sustainable  
Innovation for a Prosperous Nation”*

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## **Preface**

**In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.**

**This e-book compiles the extended abstracts that submitted to Johor International Innovation Invention Competition and Symposium 2024 (JIIICaS2024), where JIIICaS2024 is a virtual platform for all creative minds to share and present their invention and innovation. Each abstract gives a brief background on the innovation or project.**

**We hope that this e-book will help the readers to get to know the innovation done by the students and get some ideas to develop future innovation products.**



## Foreword Rector



Assalamualaikum warahmatullahi Wabarakatuh,  
Salam Sejahtera, Salam Malaysia MADANI and  
Salam UiTM Dihatiku.

In the name of Allah, the Most Gracious, the Most  
Merciful.

It is a great honor to welcome you to the Johor  
International Innovation, Invention, Competition, and  
Symposium 2024 (JIIICaS 2024). This event

connects various disciplines, focusing on education and engaging educators,  
students, researchers, and innovators from all walks of life.

Innovation is not just about ideas; it demands perseverance, creativity, and  
determination to turn those ideas into reality. The remarkable projects  
showcased today highlight the dedication and spirit of all participants.  
Initiatives like this not only explore new technologies but also cultivate skills  
and leadership among our youth. At Universiti Teknologi MARA (UiTM) Johor  
Branch, we are fully committed to fostering a dynamic culture of innovation,  
promoting the commercialization of new products, and encouraging  
meaningful collaborations with industry and society.

As we celebrate this event, I would like to extend my heartfelt gratitude to all  
sponsors, judges, the College of Computing, Informatics and Mathematics,  
UiTM Pasir Gudang Campus as the event organizer, as well as to the  
researchers and participants for their hard work in making this event a  
success. Let us continue striving for innovation and excellence. May the  
ideas presented today inspire us and lay the groundwork for future  
achievements.

Thank you.

**Associate Professor Dr. Saunah Zainon**  
**Rector**  
**Universiti Teknologi MARA (UiTM)**  
**Johor Branch**

## **(A-ST078) ENHANCING QUALITY SELECTION IN INNOVATION CONFERENCES BY FUZZY LOGIC DESIGNER**

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### **ABSTRACT**

This study investigates the manual process that judges employ to choose winners of innovation conferences. Finding opportunities to enhance the system requires an understanding of the current selection process. As part of the qualitative approach, judges were interviewed, and the selection criteria and processes used were examined. The results showed that the manual system had a number of flaws, including biases and inconsistencies in the evaluations. In order to improve accuracy in selecting winners, the study's outcome suggests implementing a more automated and systematic selection process. A fuzzy logic system has been implied for usage in innovation conferences as an approach for winner selection.

Keywords: innovation, fuzzy logic, selection, decision making

### **1.0 INTRODUCTION**

Innovation conferences are organized to generate new ideas and promote teamwork by selecting a winner. The Fuzzy Logic Approach (FLA) in these competitions aims to enhance the overall performance by improving the quality of the selection process. This approach can lead to significant improvements in the competition system, ensuring a more accurate and effective selection of winners. This study demonstrates the usefulness of fuzzy logic in supporting decision-making and improving the quality of winner selection in innovation conferences.

### **2.0 OBJECTIVES**

1. To construct a model for enhancing selection processes in innovation conferences by using a fuzzy logic-based framework for decision-makers.
2. To explore and apply Fuzzy Logic framework in real-life contexts such as the selection of winners in innovation conferences.

### **3.0 METHODOLOGY**

The methodology process encompasses several stages: data collection, system design, and implementation. Firstly, the criteria for selecting the students were identified. Three important criteria are highlighted: content, presentation, and innovation. The system uses these inputs to generate outputs in the form of awards: "Gold," "Silver," or "Bronze." Each award plays a crucial role in ensuring the system's efficiency. Data collection involves gathering relevant information about the participant's projects, such as their content quality, the effectiveness of their presentations, and the level of innovation demonstrated. System design entails developing a fuzzy logic model that incorporates these criteria to evaluate students' performance accurately. Implementation involves applying this model to the collected data to determine the appropriate award for each student. By focusing on these three criteria, the system ensures a fair and comprehensive assessment, ultimately selecting the worthiest winners.

### **4.0 RESULT**

There are various benefits to the innovation conference's selection processes switching from a manual to an automated approach. In the first place, it minimizes variations caused by human subjectivity by ensuring consistency in evaluation criteria and processes. Second, automation speeds up the process of evaluation so that judges can concentrate on deeper evaluations. Third, automated systems rely on unbiased algorithms, which reduce individual prejudices. Fourth, accountability and transparency are improved by well-defined rules and guidelines. Lastly, scalability guarantees efficient handling of an increasing number of submissions.

### **5.0 CONCLUSION**

In conclusion, there are biases and inaccuracies in the current manual selection process for Innovation Conferences. By implementing a more sophisticated selection process that makes use of cutting-edge technologies, these problems must be resolved. Innovation conferences can ensure more objective and fair decisions by standardizing their selection processes through the implementation of an automated system. By using this method, they will be able to find the worthiest winners, promoting an environment that is fairly and transparently.