

 <b>UTM</b> <small>UNIVERSITI TEKNOLOGI MALAYSIA</small> <small>RESEARCH UNIVERSITY</small>	<b>SCHOOL OF COMPUTING</b> <b>FACULTY OF ENGINEERING</b> <b>UNIVERSITI TEKNOLOGI MALAYSIA</b>
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## PSM 1 (SECV3032) PROJECT PROPOSAL FORM

Session/Semester: 2/20222023

**Instruction:** Please complete and submit this form to the departmental PSM committee. The proposal must be reviewed by the supervisor before submission.

### SECTION A: STUDENT INFORMATION

Name	ADDANIA BINTI MOKHTAZA		
Year/Course	3/SECVH		
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**Proposal No.**

1
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*(Please follow your preference. Proposal No. 1 – the highest priority, followed by Proposal No. 2 Each student may propose a maximum of 2 topics).*

### SECTION B: PROJECT DETAILS

<b>Supervisor Name:</b>	PROF. DR. MOHD SHAFRY BIN MOHD RAHIM
<b>Project Title:</b>	Integrating Zoom and Pan Technique for 2D Object Detection in Baggage Security

### Problem Background and Proposed Solution:

Billion Prima, a company that provides security services for airports, including baggage screening, currently employs an X-ray scanner for object inspection. However, the system has a limitation whereby the scanned image can only be zoomed in and out on the screen, without the ability to pan left or right. This limitation hinders the system's ability to identify and analyze the full dimensions of an object, which could result in missed or misidentified security risks. As a solution, I propose enhancing the system by integrating the zoom and pan technique that enables the system to zoom in and out of the detected object and pan left or right. This will allow for a more thorough and accurate assessment of potential threats. By implementing this proposed enhancement, the baggage security system will be better equipped to detect and prevent security breaches, ultimately leading to a safer and more secure environment for travelers.

**Objectives:**

1. To provide a detailed explanation of the zoom and pan technique for 2D object detection in baggage security.
2. To propose a practical implementation plan for integrating zoom and pan into the existing baggage security system.
3. To conduct a thorough review of the current state of 2D object detection techniques in baggage security and identify areas where zoom and pan could provide improvements.
4. To evaluate the technique used for the accuracy, efficiency, and effectiveness of baggage security systems.
5. To minimize the need for additional manual inspections of objects that may be difficult to identify by proposing an image processing technique.

**Scopes:**

The project scope includes a variety of processes, including analyzing the current baggage security system to find areas for improvement, creating and implementing image processing technology to allow the scanner to zoom in and out, and pan left and right of detected objects, reviewing the technical requirements to ensure its dependability, identifying any necessary modifications to the baggage security system, and assessing the efficiency of the enhanced system in detecting and preventing trespassers.

**Project Requirements:**

Software	: Visual Studio
Hardware	: MacBook Pro M1
Technology/Technique/ Method/Algorithm	: OpenCV, Python

**Project Type:**

<input checked="" type="checkbox"/> / <input type="checkbox"/>	System Development
<input type="checkbox"/> <input type="checkbox"/>	Research

**Project Domain** : Computer Vision

**Project Area** : Machine Learning, Image Processing

**Target Platform** : Desktop

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**SECTION C: STUDENT ACKNOWLEDGEMENT**


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I confirm that this project is:

☐ My own idea

☐ / ☐ Proposed by the supervisor Prof. Dr. Mohd Shafry Bin Mohd Rahim

Date: 20 April 2023

Student Signature:




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**SECTION D: SUPERVISOR ACKNOWLEDGEMENT**


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I ..... confirm that I have reviewed this student's project proposal and therefore agree for the proposal to be submitted for evaluation.

Date : 20 April 2023

Signature : .....

Official Stamp

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**SECTION E: EVALUATION PANEL APPROVAL**


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**Outcome:**

- ☐ Full Approval  
☐ Conditional Approval (Minor)  
☐ Conditional Approval (Major)  
☐ Fail

**Notes** (*Please state reasons for conditional or failed approval*)

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**Evaluation Panel:**

1. ....

2. ....

Date: .....

Signature: .....

Name: .....

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**SECTION F: FOR FACULTY COMMITTEE ONLY**


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Date Received: .....

Signature : ..... (Official Stamp)