IT 95
Research Methods

Midterm Project

Researchers (with Track – DN/IM/SD)	Bongo, Seth Laurence B. (SD) Salise, Yuri D. (SD) Velasco, Kurt Vincent M. (SD)
Working IT Capstone Title [What][How][What For]	A Mobile App Based Lost and Found Information System using Smart Category Tagging and Image Matching for Central Mindanao University
Working RRL Scoping Review Title	A Scoping Review of Mobile-Based Lost and Found Information Systems with Smart Tagging and Image Recognition Technologies
Google Drive link (main folder)	RRLS FOR LOST AND FOUND

1.1 PCC Framework

Element	Details
Population	Lost and found systems, users of lost and found services (students, faculty, and staff)
Concept	Mobile-based lost and found information systems for Central Mindanao University
Context	Higher Education Institutions or University Campus

1. 2 Research objectives for Scoping review

Review of Related Literature	
Statement of the Problem	Most existing studies on lost-and-found systems focus on hardware-based or sensor-assisted item retrieval, with little attention to mobile and context-aware platforms. Research integrating smart category tagging and image matching for

	automated lost/found-item identification remains underexplored, particularly in university environments. Moreover, there is a lack of studies on systems that combine smart category tagging, image-based identification, and automated notification features within a scalable mobile application. This scoping review addresses these gaps by examining how emerging technologies can enhance the efficiency, accuracy, and accessibility of digital lost-and-found information systems.
General Objective	The review is meant to show what evidence exists on how smart tags and image recognition machines combine together in mobile-based lost and found information systems, to provide a snapshot of the features, implementations, and gaps in knowledge in these tracking mechanisms.
Specific Objectives	1. To find the types of evidence available and main features of mobile-based lost and found systems. This also includes image recognition technologies like computer vision algorithms for object detection. 2. To make clear definitions and main ideas related to smart tagging and image recognition in the context of lost and found applications. 3. To look into how research has been done in this area. 4. To look into what makes these systems effective such as user adoption, accuracy rate, and integration challenges. 5. To point out the knowledge gaps left, like overlooked technologies, scalability challenges, or ethical considerations, as a step toward more focused systematic reviews.

2.1 Eligibility criteria

Dimension	Inclusion	Exclusion
Publication years (Specify year cutoff)	2015 - present	2014 and below
Language (If you include other languages, specify)	English	Non-English
Document Type (Define acceptable evidence)	Peer-reviewed article papers, journal articles, dissertations, theses, and conference papers	Opinion papers, blogs, non-scholarly papers, editorials, and commercial materials

Methods (Must include methodological detail)	Studies applying mobile applications, smart category tagging, or image recognition technologies	Papers lacking methodological details or papers that discuss personal opinions
Full Text (Ensure downloadable PDF)	Available in downloadable PDF or accessible full text	Abstract-only or unavailable full text
Relevance to Topic	Focused on lost and found systems, image matching, or tagging-based mobile systems	Studies unrelated to lost and found or not involving smart technology
Application Context	Research conducted in academic, institutional, or public service environments	Studies in commercial, industrial, or unrelated private sectors

2.2 Information sources

Database	URL	Coverage window	Notes
ACM Digital Library	https://dl.acm.org/	2015 –2025	Open access and free; limited to English-language results. **Seth Laurence B. Bongo**
IEEE Xplore	https://ieeexplore.ieee.org/	2015 –2025	Use institutional access; limited to computer science and engineering journals/conferences. **Yuri Salise**
Web of Science	https://www.webofscience.com/	2015 –2025	Use institutional access; limited to high-impact IT and AI journals. **Kurt Vincent M. Velasco**

ERIC	https://eric.ed.gov	2015 - 2025	The U.S. government–sponsored an online digital library of education research and information. **Kuret Vincent M. Velasco**

2.3 Search Strategy

Keywords	**Search Strings**
Lost and Found Systems	("lost and found" OR "lost item*" OR "missing object*") AND ("system" OR "management" OR "recovery") OR ("found property" AND "lost property")
Mobile-Based Information Systems	("mobile app" OR "smartphone application") AND ("information system" OR "platform") OR ("mobile-based system" AND "app-based") AND ("lost and found" OR "item recovery" OR "object retrieval")
Smart Category Tagging	("smart tag*" OR "RFID tag" OR "NFC tag" OR "Bluetooth beacon" OR "QR code tag") AND ("category" OR "labeling") OR ("smart labeling" AND "tagging")
Image Recognition Technologies	("image recognition" OR "image matching" OR "computer vision" OR "object detection" OR "visual search" OR "image-based identification") AND ("lost and found" OR "item recovery" OR "object retrieval")
Location Tracking Mechanisms	("object tracking" OR "item locator" OR "asset tracking") AND ("location" OR "geolocation" OR "proximity") OR ("detection service" AND "locator")
AI and Machine Learning	("artificial intelligence" OR "machine learning") AND ("deep learning" OR "neural network*") OR ("AI model" AND "learning")

User Adoption and Effectiveness	("user adoption" OR "system usability") AND ("accuracy" OR "recovery efficiency") OR ("adoption factor*" AND "effectiveness")
Ethical and Privacy Considerations	("privacy concern*" OR "user privacy") AND ("data security" OR "ethical issue*") OR ("scalability challenge*" AND "privacy")

3.1 Search Log

#	Date	Database	Boolean String	Filters	Hits	Export File
1.	Oct. 6, 2025	IEEE Xplore	("lost and found" OR "lost item*" OR "missing object*") AND ("system" OR "management" OR "recovery")	Year: 2015-2025; Conferences ; Journals;	67	Lost&Found_IEEE.csv
2.	Oct. 6, 2025	IEEE Xplore	("mobile app" AND "smartphone application") AND "information system"	Year: 2025; Conferences ; Journals	47	Mobile-Based_IEEE.csv
3.	Oct. 6, 2025	IEEE Xplore	(("smart tag*" OR "RFID tag" OR "NFC tag" OR "Bluetooth beacon" OR "QR code tag") AND ("category" OR "labeling")) OR (("smart labeling" AND "tagging"))	Year: 2015-2025; Conferences ; Journals	21	Smart-Tagging_IEEE.csv
4.	Oct. 6, 2025	IEEE Xplore	("image recognition" OR "image matching" OR "computer vision" OR "object detection" OR "visual search" OR "image-based identification") AND ("lost and found" OR "item recovery" OR "object retrieval")	*Year: 2015-2025; Conferences ; Journals*	88	Image-Recognition_IEEE.csv

5.	Oct. 6, 2025	IEEE Xplore	("object tracking" OR "item locator") AND ("location" OR "geolocation" OR "proximity") AND ("lost" OR "found")	*Year: 2020-2025; Conferences ; Journals*	46	Location-Tracking_IEEE.csv
6.	Oct. 6, 2025	IEEE Xplore	("machine learning") AND ("deep learning") AND ("object detection") AND ("lost")	*Year: 2020-2025; Conferences ;Journals*	21	AI_IEEE.csv
7.	Oct. 6, 2025	IEEE Xplore	("user adoption" OR "system usability") AND ("effectiveness")	*Year: 2021-2025; Conferences ;Journals; Mobile Apps*	45	User-Adoption_IEEE.csv
8.	Oct. 6, 2025	IEEE Xplore	("privacy concern*" OR "user privacy") AND ("data security" OR "ethical issue*") AND ("lost and found" OR "information system")	*Year: 2023-2025; Conferences ;Journals*	66	Ethical-Privacy_IEEE.csv
9.	Oct 6, 2025	ERIC	lost and found AND management AND lost property	*Year: 2016 - Present ;Journal*	11	LostandFoundSystems_WebOfScience.nbib
10.	Oct 7, 2025	ERIC	mobile app AND information system OR mobile-based system AND app-based	*Year: 2021 - 2025 ;Journal*	40	Mobile-BasedInformationSystems_ERIC.nbib
11.	Oct 7, 2025	Web of Science	smart tag AND labeling OR smart labeling AND tagging	*Year: 2015 - 2025*	43	SmartCategoryTagging_WebOfScience.ris
12.	Oct 7, 2025	Web of Science	image recognition OR image matching OR computer vision OR object detection OR visual search OR image-based identification AND lost	*Year: 2015 - 2025*	35	ImageRecognitionTechnologies_WebOfScience.ris

			and found OR item recovery OR object retrieval			
13.	Oct 7, 2025	Web of Science	object tracking AND geolocation OR proximity AND locator	*Year: 2015 - 2025*	26	LocationTrackingMechanisms_WebOfScience.ris
14.	Oct 7, 2025	ERIC	AI model AND neural network AND learning	*Year: 2025 ;Journal*	37	AIAndMachineLearning_ERIC.nbib
15.	Oct 7, 2025	ERIC	user adoption AND adoption factor AND effectiveness AND item recovery	*Year: 2015 - 2025 ;Journal*	18	UserAdoption&Effectiveness_ERIC.nbib
16.	Oct 7, 2025	ERIC	privacy concern OR user privacy AND data security OR ethical issue OR scalability challenge AND privacy	*Year: 2025 ;Journal*	68	Ethical&PrivacyConsiderations_ERIC.nbib
17.	Oct 7, 2025	ACM Digital Library	(lost and found OR lost item OR missing object) AND (system OR management OR recovery) OR (found property AND lost property)	*Year: 2020-2025; Articles, Conference Paper*	96	LostAndFound_ACM_2025.bib
18.	Oct 7, 2025	ACM Digital Library	(mobile app OR smartphone application) AND (information system OR platform)	*Year: 2023-2025; Journal Articles*	51	MobileApp_ACM_2025.bib
19.	Oct 7, 2025	ACM Digital Library	(smart tag OR RFID tag) AND (Bluetooth beacon OR QR code tag)	*Year: 2025; Journal Articles*	44	SmartTag_ACM_2025.bib
20.	Oct 7, 2025	ACM Digital Library	computer vision AND image processing AND image recognition AND image matching AND object detection AND	*Year: 2025; Journal Articles*	84	ComputerVision_ACM_2025.bib

			visual search			
21.	Oct 7, 2025	ACM Digital Library	(object tracking OR item locator OR asset tracking) AND (location OR geolocation OR proximity)	*Year: 2020-2025; Journal Articles*	46	ObjectTracking_ACM_2025.bib
22.	Oct 7, 2025	ACM Digital Library	(artificial intelligence OR machine learning) AND (deep learning OR neural network)	*Year: 2023-2025; Journal Articles*	50	ArtificialIntelligence_ACM_2025.bib
23.	Oct 7, 2025	ACM Digital Library	user adoption OR system usability) AND (accuracy OR recovery efficiency) OR (adoption factor AND effectiveness)	*Year: 2020-2023; Articles, Conference Paper*	63	UserAdoption_ACM_2025.bib
24.	Oct 7, 2025	ACM Digital Library	(privacy concern OR user privacy) AND (data security OR ethical issue) OR (scalability challenge AND privacy)	*Year: 2020-2025; Articles, Conference Paper*	95	PrivacyConcern_ACM_2025.bib

3.2 De-duplication table

Before Dedupe	After Dedupe	Tool Used	Notes
1,208	1,180	Zotero	*Duplicates removed using Title + Date + DOI + Creator; Merging Feature in Zotero*

4.1 Title/Abstract Screening Log

Paper ID	Title	Year	Source	Screener	Final Decision (Incl/Excl/Maybe)	Notes
01	Compact long-range ceramic RFID tag for on-metal and non-metal applications	2022	IEEE Xplore	Yuri Salise	Exclude	Focuses more on hardware design for RFID tags in physical label
02	Estimation of Social Distance for COVID19 Prevention using K-Nearest Neighbor Algorithm through deep learning	2022	IEEE Xplore	Yuri Salise	Exclude	Social distance detection via deep learning; no connection to lost/found or item
03	Found It! Object Tracker Mobile Application	2023	IEEE Xplore	Yuri Salise	Include	
04	Mobile Technology for Efficient Lost and Found Item Retrieval Using GIS Based Approach	2025	IEEE Xplore	Yuri Salise	Include	
05	Multiple Object Tracking and Forecasting: Jointly Predicting Current and Future Object Locations	2022	IEEE Xplore	Yuri Salise	Maybe	Could inspire location prediction in lost item tracking
06	ILFS: Intelligent Lost and Found System using Multidimensional Matching Model	2019	IEEE Xplore	Yuri Salise	Include	

07	A Novel Approach to Enhance Campus Lost and Found Services through Integration of QR Code with Personalized Item Registration	2024	IEEE Xplore	Yuri Salise	Include	
08	User Experience Analysis on Mobile Prosecutor Application Using System Usability Scale and PACMAD Method	2024	IEEE Xplore	Yuri Salise	Maybe	Guide designs for app's efficiency and satisfaction in matching or in reporting an item
09	The Critical Role Played by Big Data Management in Effectively Addressing the Security and Overall Privacy Concerns Through Correlation Analysis	2022	IEEE Xplore	Yuri Salise	Maybe	About secure matching and notifications, basically for image data
10	The Impact of Perceived Risks to Continuance Intention on Using NFC Technology	2023	IEEE Xplore	Yuri Salise	Maybe	User adoption and perceived risks in NFC mobile tech; could inform us about privacy/aspects of the possible app
11	Securing IoT Enabled RFID Based Object Tracking Systems: A Symmetric Cryptography Based Authentication Protocol for Efficient Smart Object Tracking	2021	IEEE Xplore	Yuri Salise	Maybe	Focus on security in RFID object tracking; more on protocols than features

12	Evaluating the Privacy and Security Implications of Mobile Apps	2025	IEEE Xplore	Yuri Salise	Maybe	Assesses privacy in mobile apps; ethical design for data handling in notifications and admin features
13	Three-Factor UCSSO Scheme With Fast Authentication and Privacy Protection for Telecare Medicine Information Systems	2020	IEEE Xplore	Yuri Salise	Maybe	Support user login and how dispute is resolved within the app
14	Effective Fisher vector aggregation for 3D object retrieval	2017	IEEE Xplore	Yuri Salise	Maybe	Could support us in advanced image matching; but this one is 3D-focused though
15	Aggregated Deep Convolutional Neural Networks for Multi-View 3D Object Retrieval	2019	IEEE Xplore	Yuri Salise	Maybe	CNN-based multi-view object retrieval; relevant for image matching feature
16	Large visual words for large scale image classification	2015	IEEE Xplore	Yuri Salise	Maybe	Visual word image classifying; for smart tagging and image similarity
17	Usability Evaluation on Life Insurance Application Using System Usability Scale and ISO 9241-11	2022	IEEE Xplore	Yuri Salise	Maybe	Testing usability for mobile apps; relevant for evaluating app's UX, especially for non-tech-savvy university users
18	Evaluating and Optimizing MySejahtera App Analytics for Sustainable Digital Government Services	2025	IEEE Xplore	Yuri Salise	Include	Relevant for user engagement and optimization; app adoption; analytics for matches or sustainability features;

19	Design and Implementation of the Lost-and-Found System Based on Amap API	2018	IEEE Xplore	Yuri Salise	Include	
20	A Comparative Study on Lost and Found Management Systems in Academic Institutions: Assessing Reliability Across Universiti Tunku Abdul Rahman, California State Polytechnic University, and Nazareth School of National University	2024	IEEE Xplore	Yuri Salise	Include	
21	SecureFind: Secure and Privacy-Preservin g Object Finding via Mobile Crowdsourcing	2016	IEEE Xplore	Yuri Salise	Include	
22	Efficient detection of missing object using Zigbee technology	2017	IEEE Xplore	Yuri Salise	Maybe	Using Zigbee for missing object detection; hardware that complements the app's matching; tech specific
23	Enhancing the Bright Gas Scanner Application Using Design Thinking Method to Improve User Satisfaction and Sales Realization	2024	IEEE Xplore	Yuri Salise	Maybe	Could guide for app enhancement; informs iterative development for the app like probably notifications or alerts
24	Noise-Resistant	2018	IEEE Xplore	Yuri Salise	Maybe	Deep learning for

	Deep Learning for Object Classification in Three-Dimensional Point Clouds Using a Point Pair Descriptor					object classification; could enhance tagging/matching robustness
25	Vehicle Detection and Tracking in Adverse Weather Using a Deep Learning Framework	2021	IEEE Xplore	Yuri Salise	Maybe	Deep learning for object detection/tracking; adaptable to image matching for lost items in certain conditions
26	A Versatile Flexible UHF RFID Tag for Glass Bottle Labelling in Self-Service Stores	2018	IEEE Xplore	Yuri Salise	Maybe	RFID-based labeling for items; relevant to smart tagging hardware that could integrate with app for item identification
27	Lost and Found: Identifying Objects in Long-term Surveillance Videos	2015	IEEE Xplore	Yuri Salise	Include	
28	Descriptor Transition Tables for Object Retrieval using Unconstrained Cluttered Video Acquired using a Consumer Level Handheld Mobile Device	2016	IEEE Xplore	Yuri Salise	Include	
29	Attention-based Natural Language Person Retrieval	2017	IEEE Xplore	Yuri Salise	Include	
30	Natural Language Object Retrieval	2016	IEEE Xplore	Yuri Salise	Include	
31	Object retrieval	2021	IEEE Xplore	Yuri Salise	Include	

	system based on feature matching technology					
32	Improving Object Retrieval Quality by Integration of Similarity Propagation and Query Expansion	2019	IEEE Xplore	Yuri Salise	Include	
33	A Tagging Solution to Discover IoT Devices in Apartments	2023	ACM Digital Library	Seth Laurence B. Bongo	Exclude	Focuses on privacy-aware IoT device tracking in smart homes, using wireless tags to locate hidden or forgotten devices.
34	Indoor Area Estimation System Using RSSI-Measuring Handheld Reader Utilizing Directional Reference RFID Tags and Machine Learning	Natural Language Object Retrieval2024	ACM Digital Library	Seth Laurence B. Bongo	Include	
35	Real-time Fusion and Object Detection Based on Visible Light and Infrared Images	2025	ACM Digital Library	Seth Laurence B. Bongo	Exclude	Focuses on object detection for autonomous driving using infrared and visible light fusion; unrelated to lost-and-found systems.
36	GO-Finder: A Registration-free Wearable System for Assisting Users in Finding Lost Hand-held Objects	2022	ACM Digital Library	Seth Laurence B. Bongo	Include	
37	Enhancing Non-Coal Object Recognition Using	2024	ACM Digital Library	Seth Laurence B. Bongo	Maybe	Applies computer vision and deep learning (YOLOv5

	Deep Learning on Conveyor Belts					with attention mechanisms) for object recognition in challenging visual conditions.
38	A Comprehensive Survey on Composed Image Retrieval	2025	ACM Digital Library	Seth Laurence B. Bongo	Maybe	Composed Image Retrieval (CIR) involves image-based search and matching using visual and textual inputs.
39	A Survey on Image Segmentation and Super-resolution Reconstruction in Visual Sensor Networks	2025	ACM Digital Library	Seth Laurence B. Bongo	Exclude	Focuses on visual sensor networks, image segmentation, and super-resolution for sensor efficiency; unrelated to our study
40	Advances in artificial intelligence for image processing: techniques, applications, and optimization	2023	ACM Digital Library	Seth Laurence B. Bongo	Include	
41	Artificial intelligence in computer vision	2021	ACM Digital Library	Seth Laurence B. Bongo	Include	
42	FIN. IT: LOST AND FOUND MOBILE APPLICATION	2024	ACM Digital Library	Seth Laurence B. Bongo	Include	
43	Social Media Apps: A Paradigm for Examining Usability of Mobile Apps for Working-Age Adults with Mild-Moderate Cognitive Disabilities	2025	ACM Digital Library	Seth Laurence B. Bongo	Exclude	Focuses on findings about usability barriers and UI design issues; Not related/enough for the system.
44	AppalLOCATE: A	2023	ACM Digital	Seth	Include	

	Lost and Found Solution		Library	Laurence B. Bongo		
45	Mafqodat: A Secure and Safe Mobile Application to Retrieve Lost Items in Educational Institutes	2024	ACM Digital Library	Seth Laurence B. Bongo	Include	
46	Comparative study of seamless asset location and tracking technologies	2020	ACM Digital Library	Seth Laurence B. Bongo	Maybe	Focuses on accuracy and reliability of asset tracking technologies
47	RLOMM: An Efficient and Robust Online Map Matching Framework with Reinforcement Learning	2025	ACM Digital Library	Seth Laurence B. Bongo	Include	
48	MC-LoRa: Multi-node Concurrent Localization for LoRaWAN Indoors and Outdoors	2025	ACM Digital Library	Seth Laurence B. Bongo	Exclude	Focuses on multi-node localization on Internet of Things (IoT); unrelated to the study
49	Defining Map System for Collaborative Map Creation and Data Reuse	2025	ACM Digital Library	Seth Laurence B. Bongo	Maybe	Discusses about mapping and location-based features; can offer insights for proximity features.
50	Location Privacy Schemes in Vehicular Networks: Taxonomy, Comparative Analysis, Design Challenges, and Future Opportunities	2025	ACM Digital Library	Seth Laurence B. Bongo	Exclude	Focuses on vehicular networks and location privacy; not related to the study

51	Privacy Preserving Conversion Modeling in Data Clean Room	2024	ACM Digital Library	Seth Laurence B. Bongo	Include	
52	Privacy-Preservin g Phrase Search over Encrypted Data	2022	ACM Digital Library	Seth Laurence B. Bongo	Maybe	Discusses privacy-preserving search and data security; can give insights about encrypted storage and secure retrieval
53	A sector-based approach to AI ethics: Understanding ethical issues of AI-related incidents within their sectoral context	2023	ACM Digital Library	Seth Laurence B. Bongo	Include	
54	A Hybrid Approach for Localisation of Sensor Nodes in Remote Locations	2025	ACM Digital Library	Seth Laurence B. Bongo	Exclude	Focuses on wireless sensor network node localization using AoA and RSSI; unrelated to the study
55	Digital Twins in Security Operations: State of the Art and Future Perspectives	2025	ACM Digital Library	Seth Laurence B. Bongo	Maybe	Discusses detecting and classifying visual content in mobile application interfaces; can be used as reference for image matching and smart tagging components.
56	Large Language Models Are Zero-Shot Recognizers for Activities of Daily Living	2025	ACM Digital Library	Seth Laurence B. Bongo	Exclude	Focuses on activity recognition in smart homes using sensor data and LLMs; unrelated to the study
57	A feasibility study	2023	ACM Digital	Seth	Include	

	of usability and UX evaluation technologies in multi-touch context: A quantitative and qualitative analysis		Library	Laurence B. Bongo		
58	A User-Centered System Usability Evaluation of a Virtual Reality Application Developed for Solar Farm Training	2023	ACM Digital Library	Seth Laurence B. Bongo	Exclude	Focuses on usability evaluation in virtual reality training systems; not related to our study
59	Determinants of mobile apps adoption among young adults: theoretical extension and analysis	2021	ACM Digital Library	Seth Laurence B. Bongo	Include	
60	An Efficient Deep Learning-based Content-based Image Retrieval Framework	2021	ACM Digital Library	Seth Laurence B. Bongo	Include	
61	Machine Learning in Mobile Applications	2022	ACM Digital Library	Seth Laurence B. Bongo	Include	
62	An Automatic Image Content Retrieval Method for better Mobile Device Display User Experiences	2021	ACM Digital Library	Seth Laurence B. Bongo	Include	
63	Lost and Found Platform	2025	ACM Digital Library	Seth Laurence B. Bongo	Include	
64	Using machine learning for object classification and	2024	ACM Digital Library	Seth Laurence B. Bongo	Include	

	filtering					
65	Object Recognition to Content Based Image Retrieval: A Study of the Developments and Applications of Computer Vision	2023	ACM Digital Library	Seth Laurence B. Bongo	Include	
66	A Machine Learning Model for Content-Based Image Retrieval	2023	ACM Digital Library	Seth Laurence B. Bongo	Include	
67	Differential Effects of Navigational Aids on Adults with Intellectual Disability	2022	ERIC	Kurt Vincent M. Velasco	Include	
68	UHF RFID Label Nanometer Printing Technology and its Application in Smart Libraries	2017	Web of Science	Kurt Vincent M. Velasco	Exclude	Does not relate to the topic at all
69	Durable and sustainable smart tags for identity management and condition monitoring: Case study for reusable packaging and recyclable data carriers	2023	Web of Science	Kurt Vincent M. Velasco	Maybe	Focuses on Comparison of RFID, NFC, and barcode smart tags for reuse and monitoring
70	Talk, Text, Tag? Understanding Self-Annotation of Smart Home Data from a User's Perspective	2018	Web of Science	Kurt Vincent M. Velasco	Maybe	Focuses on user tagging and annotation of sensor events using an app
71	FRCNN-Based	2022	Web of Science	Kurt	Exclude	Irrelevant because it

	Reinforcement Learning for Real-Time Vehicle Detection, Tracking and Geolocation from UAS			Vincent M. Velasco		focuses on aerial vehicle detection and tracking using drones, unlike mobile lost and found systems for campus or personal item recovery.
72	Low-cost real-time aerial object detection and GPS location tracking pipeline	2024	Web of Science	Kurt Vincent M. Velasco	Maybe	May be relevant on the tracking feature but still needs some reviewing
73	Coverage Error in Data Collection Combining Mobile Surveys with Passive Measurement Using Apps: Data from a German National Survey	2023	ERIC	Kurt Vincent M. Velasco	Maybe	Focuses on coverage error concerns in mobile data collection studies
74	Critical Success Factors and Challenges for Individual Digital Study Assistants in Higher Education: A Mixed Methods Analysis	2023	ERIC	Kurt Vincent M. Velasco	Exclude	Does not mention any relevant
75	SODRet: Instance retrieval using salient object detection for self-service shopping	2024	Web of Science	Kurt Vincent M. Velasco	Include	
76	Multi-View Object Detection Based on Deep Learning	2018	Web of Science	Kurt Vincent M. Velasco	Maybe	Focusing on multi-view detection improves small object detection accuracy.
77	NeighboAR: Efficient Object	2024	Web of Science	Kurt Vincent M.	Maybe	Focuses on AR-based object

	Retrieval using Proximity- and Gaze-based Object Grouping with an AR System			Velasco		retrieval system using proximity relationships and gaze tracking
78	MSC-Trans: A Multi-Feature-Fusion Network with Encoding Structure for Student Engagement Detecting	2025	ERIC	Kurt Vincent M. Velasco	Maybe	Focuses on multimodal temporal fusion framework for classroom engagement detection
79	Linking Survey with Twitter Data: Examining Associations among Smartphone Usage, Privacy Concern and Twitter Linkage Consent	2025	ERIC	Kurt Vincent M. Velasco	Maybe	Might not be useful for the whole project
80	Penciling: An Anonymization Method for Social Media Images	2025	ERIC	Kurt Vincent M. Velasco	Maybe	Focuses on image anonymization techniques for privacy protection
81	iReportNow: A Mobile-Based Lost and Stolen Reporting System	2022	ERIC	Kurt Vincent M. Velasco	Include	
82	Lost and Found: Overcoming Detector Failures in Online Multi-object Tracking	2024	ERIC	Kurt Vincent M. Velasco	Include	
83	Mobile-Based Archival and Retrieval of Missing Objects Using Image Matching	2015	ERIC	Kurt Vincent M. Velasco	Include	

84	Archival and Retrieval of Lost Objects using Multi-feature Image Matching in Mobile Applications	2016	ERIC	Kurt Vincent M. Velasco	Include	
85	LostNet: A smart way for lost and find	2023	ERIC	Kurt Vincent M. Velasco	Include	
86	Lost and Found Web Application	2025	ERIC	Kurt Vincent M. Velasco	Include	
87	Haram Lost and Found	2024	ERIC	Kurt Vincent M. Velasco	Include	
88	Building a Smarter Lost and Found Systems: Leveraging TensorFlow.js for Image-Based Item Matching	2025	Web of Science	Kurt Vincent M. Velasco	Include	
89	An Overview of Computer Vision Techniques for Image Retrieval	2024	Web of Science	Kurt Vincent M. Velasco	Include	
90	Lost item identification model development using similarity prediction method with CNN ResNet algorithm	2023	Web of Science	Kurt Vincent M. Velasco	Include	
91	Lost-Found Item Net for Classification Based on Inception-Resnet	2022	ERIC	Kurt Vincent M. Velasco	Include	
92	Mafqudat: Arabic	2020	ERIC	Kurt	Include	

	Smartphone Application for Reporting Lost and Found Items			Vincent M. Velasco		
93	Web and Mobile Application Based Missing Query Platform (Lost and Found BD)	2021	ERIC	Kurt Vincent M. Velasco	Include	
94	Find Mine: Find the Lost Items via Mobile App	2021	ERIC	Kurt Vincent M. Velasco	Include	
95	IPM-Model: AI and metaheuristic-enabled face recognition using image partial matching for multimedia forensics investigation with genetic algorithm	2022	Web of Science	Kurt Vincent M. Velasco	Include	
96	UTHM Lost and Found Management System	2025	Web of Sience	Kurt Vincent M. Velasco	Include	
97	Application of feature-based image matching method as an object recognition method	2025	Web of Science	Kurt Vincent M. Velasco	Include	
98	Matching Image and Sentence With Multi-Faceted Representations	2019	Web of Science	Kurt Vincent M. Velasco	Include	
99	Image Matching from Handcrafted to Deep Features: A Survey	2020	Web of Science	Kurt Vincent M. Velasco	Include	

100	Image Feature Matching Based on Deep Learning	2018	Web of Science	Kurt Vincent M. Velasco	Include	
101	On Mobile Applications Based on Proximity	2019	ERIC	Kurt Vincent M. Velasco	Include	
102	Smart Tagging Meets Structured Content: Redefining Metadata for AI-Powered Ecosystems	2025	Web of Science	Kurt Vincent M. Velasco	Include	

4.2 Full-text Screening Log

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
01	Found It! Object Tracker Mobile Application	2023	001-Nasrul-ObjectTrackerMobileApp.pdf	Yuri Salise	Include	
02	Mobile Technology for Efficient Lost and Found Item Retrieval Using GIS Based Approach	2025	002-Prashanth-MobileTechEfficientLost&FoundItemRetrieval.pdf	Yuri Salise	Include	
03	Multiple Object Tracking and Forecasting: Jointly Predicting Current and Future Object Locations	2022		Yuri Salise	Exclude	Wrong Domain
04	ILFS: Intelligent Lost and Found System using Multidimensional Matching Model	2019	004-Yao-IntelligentLFSMultiMatchingModel.pdf	Yuri Salise	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
05	A Novel Approach to Enhance Campus Lost and Found Services through Integration of QR Code with Personalized Item Registration	2024	005-Sinha-NovelApproachEnhanceCampusLost&FoundServices.pdf	Yuri Salise	Include	
06	User Experience Analysis on Mobile Prosecutor Application Using System Usability Scale and PACMAD Method	2024	006-Fauziyah-UXAnalysisMobilePresecutorApp.pdf	Yuri Salise	Include	
07	The Critical Role Played by Big Data Management in Effectively Addressing the Security and Overall Privacy Concerns Through Correlation Analysis	2022	007-Ahamad-CriticalRolePlayedBigDataManagement.pdf	Yuri Salise	Include	
08	The Impact of Perceived Risks to Continuance Intention on Using NFC Technology	2023		Yuri Salise	Exclude	Wrong Domain
09	Securing IoT Enabled RFID Based Object Tracking Systems: A Symmetric	2021	009-Sultan-SecuringIoTEnabledRFIDBasedOTS.pdf	Yuri Salise	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
	Cryptography Based Authentication Protocol for Efficient Smart Object Tracking					
10	Evaluating the Privacy and Security Implications of Mobile Apps	2025	010-Mazumder-EvaluatingPrivacySecurityImplicationsMobileApps.pdf	Yuri Salise	Include	
11	Three-Factor UCSSO Scheme With Fast Authentication and Privacy Protection for Telecare Medicine Information Systems	2020	011-Hsu-ThreeFactorUCSSOSchemeWithFast Authentication Privacy Protection.pdf	Yuri Salise	Include	
12	Effective Fisher vector aggregation for 3D object retrieval	2017		Yuri Salise	Exclude	Wrong Domain
13	Aggregated Deep Convolutional Neural Networks for Multi-View 3D Object Retrieval	2019		Yuri Salise	Exclude	Wrong Domain
14	Large visual words for large scale image classification	2015		Yuri Salise	Exclude	Wrong Domain
15	Usability Evaluation on Life Insurance Application Using System Usability Scale and ISO	2022		Yuri Salise	Exclude	No Full Text

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
	9241-11					
16	Evaluating and Optimizing MySejahtera App Analytics for Sustainable Digital Government Services	2025	016-Ashar-EvaluatingOptimizingMySejahteraApp.pdf	Yuri Salise	Include	
17	Design and Implementation of the Lost-and-Found System Based on Amap API	2018	017-Zhoa-Design&ImplementaionLost&FoundSystem.pdf	Yuri Salise	Include	
18	A Comparative Study on Lost and Found Management Systems in Academic Institutions: Assessing Reliability Across Universiti Tunku Abdul Rahman, California State Polytechnic University, and Nazareth School of National University	2024	018-David-ComparativeStudyLost&FoundManagementSystem.pdf	Yuri Salise	Include	
19	SecureFind: Secure and Privacy-Preserving Object Finding via Mobile Crowdsourcing	2016	019-Sun-Secure&PrivacyPreservingObjectFinding.pdf	Yuri Salise	Include	
20	Efficient Detection of Missing Object	2017	020-Immaculate-EfficientDetectionMissingObject.pdf	Yuri Salise	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
	Using Zigbee Technology					
21	Enhancing the Bright Gas Scanner Application Using Design Thinking Method to Improve User Satisfaction and Sales Realization	2024		Yuri Salise	Exclude	Wrong Domain
22	Noise-Resistant Deep Learning for Object Classification in Three-Dimensional Point Clouds Using a Point Pair Descriptor	2018		Yuri Salise	Exclude	Wrong Domain
23	Vehicle Detection and Tracking in Adverse Weather Using a Deep Learning Framework	2021		Yuri Salise	Exclude	Wrong Domain
24	A Versatile Flexible UHF RFID Tag for Glass Bottle Labelling in Self-Service Stores	2018		Yuri Salise	Exclude	Wrong Domain
25	Lost and Found: Identifying Objects in Long-term Surveillance Videos	2015	025-Saemi-Lost&FoundIdentifyingObjects.pdf	Yuri Salise	Include	
26	Descriptor Transition Tables for Object	2016	026-Lous-DescriptorTransistionTablesObjectRetrieval.pdf	Yuri Salise	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
	Retrieval using Unconstrained Cluttered Video Acquired using a Consumer Level Handheld Mobile Device					
27	Attention-based Natural Language Person Retrieval	2017	027-Zhou-AttentionBasedNLPersonRetrieval.pdf	Yuri Salise	Include	
28	Natural Language Object Retrieval	2016	028-Hu-NaturalLanguageObjectRetrieval.pdf	Yuri Salise	Include	
29	Object Retrieval System Based on Feature Matching Technology	2021	029-Zhang-ObjectRetrievalSystem.pdf	Yuri Salise	Include	
30	Improving Object Retrieval Quality by Integration of Similarity Propagation and Query Expansion	2019	030-Pang-ImprovingObjectRetrievalQuality.pdf	Yuri Salise	Include	
31	Indoor Area Estimation System Using RSSI-Measuring Handheld Reader Utilizing Directional Reference RFID Tags and Machine Learning	2024	031-Hadi-IndoorAreaEstimationSystemUsingRSSIMeasuringHandheldReaderUtilizingDirectionalReferenceRFIDTagsandMachineLearning.pdf	Seth Laurence B. Bongo	Include	
32	GO-Finder: A Registration-free Wearable System for Assisting Users in Finding	2022	032-Yagi-GOFinderARegistrationfreeWearableSystemforAssistingUsersinFindingLostHandheldOb	Seth Laurence B. Bongo	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
	Lost Hand-held Objects		jects.pdf			
33	Enhancing Non-Coal Object Recognition Using Deep Learning on Conveyor Belts	2024		Seth Laurence B. Bongo	Exclude	No full text
34	A Comprehensive Survey on Composed Image Retrieval	2025	034-Song-AComprehensiveSurveyonComposedImageRetrieval.pdf	Seth Laurence B. Bongo	Include	
35	Advances in artificial intelligence for image processing: techniques, applications, and optimization	2023	035-Boopathi-AdvancesInArtificialIntelligenceforImageProcessingTechniquesApplicationsandOptimization.pdf	Seth Laurence B. Bongo	Include	
36	Artificial intelligence in computer vision	2021	036-Karn-ArtificialintelligenceinComputerVision.pdf	Seth Laurence B. Bongo	Include	
37	FIN. IT: LOST AND FOUND MOBILE APPLICATION	2024		Seth Laurence B. Bongo	Exclude	No full text
38	AppalLOCATE: A Lost and Found Solution	2023	038-Wilson-AppalLOCATEALostandFoundSolution.pdf	Seth Laurence B. Bongo	Include	
39	Mafqodat: A Secure and Safe Mobile Application to Retrieve Lost Items in Educational Institutes	2024		Seth Laurence B. Bongo	Exclude	No Full Text

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
40	Comparative study of seamless asset location and tracking technologies	2020	040-Ahmed-ComparativeStudyofSeamlessAssetLocationandTrackingTechnologies.pdf	Seth Laurence B. Bongo	Include	
41	RLOMM: An Efficient and Robust Online Map Matching Framework with Reinforcement Learning	2025	041-Chen-RLOMMAnEfficientandRobustOnlineMapMatchingFrameworkWithReinforcementLearning.pdf	Seth Laurence B. Bongo	Include	
42	Defining Map System for Collaborative Map Creation and Data Reuse	2025	042-Lei-DefiningMapSystemforCollaborativeMapCreationandDataReuse.pdf	Seth Laurence B. Bongo	Include	
43	Privacy Preserving Conversion Modeling in Data Clean Room	2024	043-Li-PrivacyPreservingConversionModelinginDataCleanRoom.pdf	Seth Laurence B. Bongo	Include	
44	Privacy-Preserving Phrase Search over Encrypted Data	2022		Seth Laurence B. Bongo	Exclude	No Full Text
45	A sector-based approach to AI ethics: Understanding ethical issues of AI-related incidents within their sectoral context	2023	045-Burema-Asector-basedapproachtoAIethicsUnderstandingethicalissuesofAI-relatedincidentswithintheirsectoralcontext.pdf	Seth Laurence B. Bongo	Include	
46	Digital Twins in Security Operations: State of the Art and Future	2025	046-Empl-DigitalTwinsinSecurityOperationsStateoftheArtandFuturePerspectives.pdf	Seth Laurence B. Bongo	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
	Perspectives					
47	A feasibility study of usability and UX evaluation technologies in multi-touch context: A quantitative and qualitative analysis	2023		Seth Laurence B. Bongo	Exclude	No Full Text
48	Determinants of mobile apps adoption among young adults: theoretical extension and analysis	2021	048-Mehra-Determinantsofmobileappsadoptionamongyoungadultstheoreticalextensionandanalysis.pdf	Seth Laurence B. Bongo	Include	
49	An Efficient Deep Learning-based Content-based Image Retrieval Framework	2021	049-Sivakumar-AnEfficientDeepLearningbasedContentbasedImageRetrievalFramework.pdf	Seth Laurence B. Bongo	Include	
50	Machine Learning in Mobile Applications	2022	050-Ganesan-MachineLearninginMobileApplications.pdf	Seth Laurence B. Bongo	Include	
51	An Automatic Image Content Retrieval Method for better Mobile Device Display User Experiences	2021	051-Bruno-AnAutomaticImageContentRetrievalMethodforbetterMobileDeviceDisplayUserExperiences.pdf	Seth Laurence B. Bongo	Include	
52	Lost and Found Platform	2025	052-Shrivastava-LostAndFoundPlatform.pdf	Seth Laurence B. Bongo	Include	
53	Using machine learning for object classification and filtering	2024	053-Dauphin-Usingmachinelearningforobjectclassificationandfiltering.pdf	Seth Laurence B. Bongo	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
54	Object Recognition to Content Based Image Retrieval: A Study of the Developments and Applications of Computer Vision	2023	054-Mangalika-ObjectRecognitiontoContentBasedImageRetrievalAStudyoftheDevelopmentsandApplicationsofComputerVision.pdf	Seth Laurence B. Bongo	Include	
55	A Machine Learning Model for Content-Based Image Retrieval	2023	055-Singla-AMachineLearningModelforContentBasedImageRetrieval.pdf	Seth Laurence B. Bongo	Include	
56	Coverage Error in Data Collection Combining Mobile Surveys with Passive Measurement Using Apps: Data from a German National Survey	2023	056-Florian Keusch-Coverage ErrorinData CollectionCombinin MobileSurveys with PassiveMeasurementUsingApps:DatafromaGermanNationalSurvey.pdf	Kurt Vincent M. Velasco	Include	
57	SODRet: Instance retrieval using salient object detection for self-service shopping	2024	057-Muhammad UmairHassan-SODRetInstanceRetrievalUsingSalientObjectDetectionForSelf-serviceShopping.pdf	Kurt Vincent M. Velasco	Include	
58	Multi-View Object Detection Based on Deep Learning	2018		Kurt Vincent M. Velasco	Exclude	No full text
59	iReportNow: A Mobile-Based Lost and Stolen Reporting System	2022	059-Muhammad-Bello-iReportNowAMobile-BasedLostandStolenReportingSystem.pdf	Kurt Vincent M. Velasco	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
60	Lost and Found: Overcoming Detector Failures in Online Multi-object Tracking	2024		Kurt Vincent M. Velasco	Exclude	No full text
61	Mobile-Based Archival and Retrieval of Missing Objects Using Image Matching	2015	061-Mohammed-Ghazal-Mobile-BasedArchivalandRetrievalofMissingObjectsUsingImageMatching.pdf	Kurt Vincent M. Velasco	Include	
62	Archival and Retrieval of Lost Objects using Multi-feature Image Matching in Mobile Applications	2016	062-Mohammed-Ghazal-ArchivalandRetrievalofLostObjectsusingMulti-featureImageMatchingInMobileApplications.pdf	Kurt Vincent M. Velasco	Include	
63	LostNet: A smart way for lost and find	2023	063-Meihua-Zhou-LostNetASmartWayForLostAndFind.pdf	Kurt Vincent M. Velasco	Include	
64	Lost and Found Web Application	2025	064-Deepika-Pede-LostandFoundWebApplication.pdf	Kurt Vincent M. Velasco	Include	
65	Haram Lost and Found	2024	065-Adnan-Nadeem-HaramLostAndFound.pdf	Kurt Vincent M. Velasco	Include	
66	Building a Smarter Lost and Found Systems: Leveraging TensorFlow.js for Image-Based Item Matching	2025		Kurt Vincent M. Velasco	Exclude	No full text
67	An Overview of Computer Vision Techniques for Image Retrieval	2024		Kurt Vincent M. Velasco	Exclude	No full text

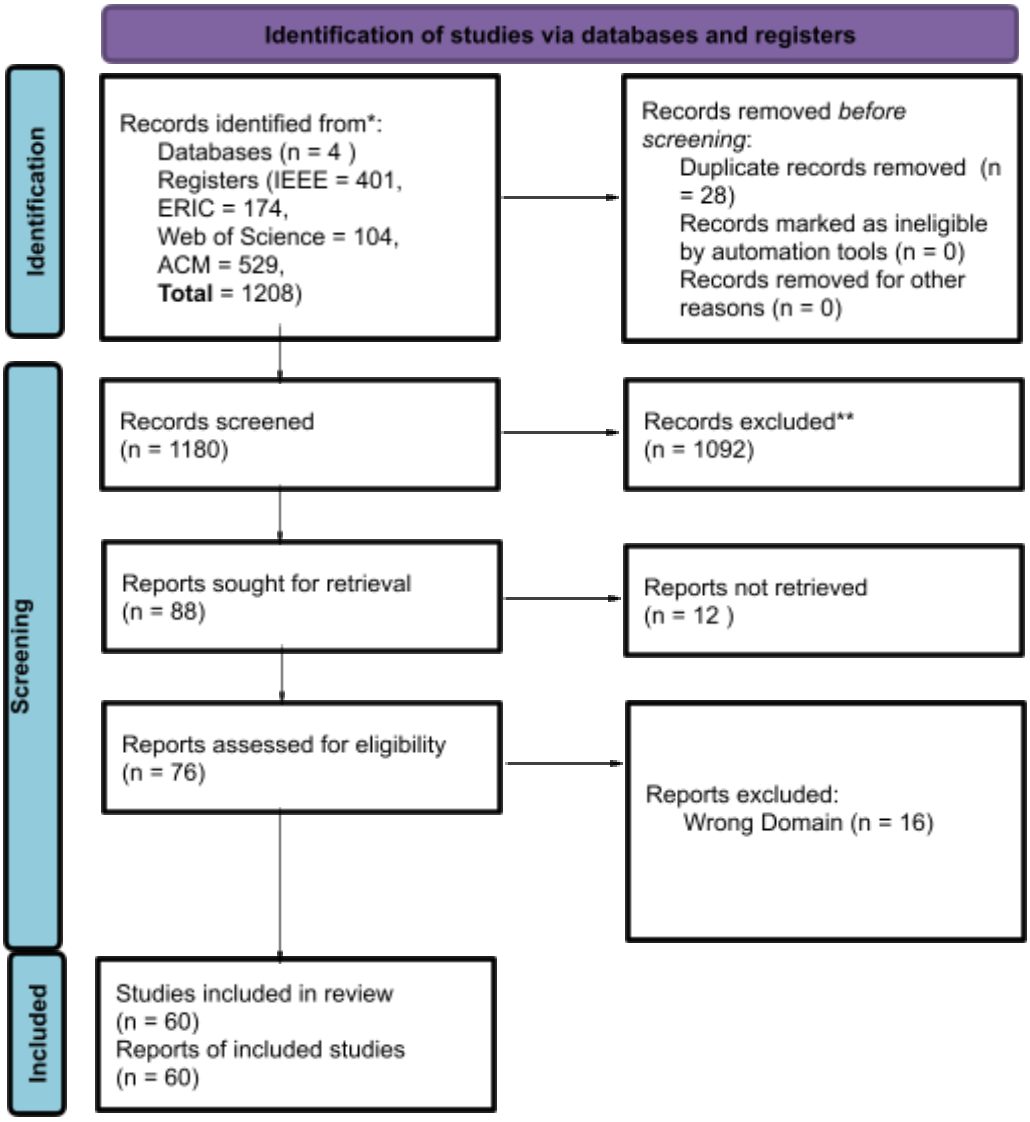
Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
68	Lost item identification model development using similarity prediction method with CNN ResNet algorithm	2023	068-Jonathan-Prawira-LostItemIdentificationModelDevelopmentUsingSimilarityPredictionMethodWithCNNResNetAlgorithm	Kurt Vincent M. Velasco	Exclude	No full text
69	Lost-Found Item Net for Classification Based on Inception-Resnet	2022	069-Yuxin-Liu-Lost-FoundItemNetForClassificationBasedonInception-Resnet.pdf	Kurt Vincent M. Velasco	Include	
70	Mafqudat: Arabic Smartphone Application for Reporting Lost and Found Items	2020	070-N.I.Alnaghaimshi-MafqudatArabicSmartphoneApplicationForReportingLostAndFoundItems.pdf	Kurt Vincent M. Velasco	Include	
71	Web and Mobile Application Based Missing Query Platform (Lost and Found BD)	2021	071-Md.Julhas Hossain-Web and Mobile Application Based Missing Query Platform (Lost and Found BD).pdf	Kurt Vincent M. Velasco	Include	
72	Find Mine: Find the Lost Items via Mobile App	2021	072-Pushpa-Choudhary-FindMineFindTheLostItemsViaMobileApp.pdf	Kurt Vincent M. Velasco	Include	
73	IPM-Model: AI and metaheuristic-enabled face recognition using image partial matching for multimedia forensics investigation with	2022	073-Abdullah-Ayub Khan-IPM-Model AIAndMetaheuristic-enabledFaceRecognitionUsingImagePartialMatchingForMultimediaForensicsInvestigationWithGeneticAlgorithm.pdf	Kurt Vincent M. Velasco	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
	genetic algorithm					
74	UTHM Lost and Found Management System	2025	074-Nurul-Fatihah-Shahzan-UTHM LostAndFoundManagementSystem.pdf	Kurt Vincent M. Velasco	Include	
75	Application of feature-based image matching method as an object recognition method	2025	075-Gede-Made-Karma-ApplicationOfFeature-basedImageMatchingMethodAsAnObjectRecognitionMethod.pdf	Kurt Vincent M. Velasco	Include	
76	Differential Effects of Navigational Aids on Adults with Intellectual Disability	2022		Kurt Vincent M. Velasco	Exclude	No full text
77	Durable and sustainable smart tags for identity management and condition monitoring: Case study for reusable packaging and recyclable data carriers	2023		Kurt Vincent M. Velasco	Exclude	Wrong Domain
78	Talk, Text, Tag? Understanding Self-Annotation of Smart Home Data from a User's Perspective	2018		Kurt Vincent M. Velasco	Exclude	Wrong Domain
79	Low-cost real-time aerial object detection and GPS location	2024		Kurt Vincent M. Velasco	Exclude	Wrong Domain

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
	tracking pipeline					
80	NeighboAR: Efficient Object Retrieval using Proximity- and Gaze-based Object Grouping with an AR System	2024		Kurt Vincent M. Velasco	Exclude	Wrong Domain
81	MSC-Trans: A Multi-Feature-Fusion Network with Encoding Structure for Student Engagement Detecting	2025		Kurt Vincent M. Velasco	Exclude	Wrong Domain
82	Linking Survey with Twitter Data: Examining Associations among Smartphone Usage, Privacy Concern and Twitter Linkage Consent	2025		Kurt Vincent M. Velasco	Exclude	Wrong Domain
83	Penciling: An Anonymization Method for Social Media Images	2025		Kurt Vincent M. Velasco	Exclude	Wrong Domain
84	Matching Image and Sentence With Multi-Faceted Representations	2019	084-Lia-Ma-MatchingImageandSentenceWithMulti-FacetedRepresentations.pdf	Kurt Vincent M. Velasco	Include	
85	Image Matching from Handcrafted to Deep Features: A Survey	2020	085-Jiayi-Ma-ImageMatchingFromHandCraftedToDeepFeaturesASurvey.pdf	Kurt Vincent M. Velasco	Include	

Paper ID	Title	Year	PDF Filename	Screener	Final Decision (Incl/Excl)	Reason if Excluded
86	Image Feature Matching Based on Deep Learning	2018	086-Yinyang-Liu-ImageFeatureMatchingBasedOnDeepLearning.pdf	Kurt Vincent M. Velasco	Include	
87	On Mobile Applications Based on Proximity	2019	087-Dmitry-Namiot-OnMobileApplicationsBasedOnProximity.pdf	Kurt Vincent M. Velasco	Include	
88	Smart Tagging Meets Structured Content: Redefining Metadata for AI-Powered Ecosystems	2025	088-Rakesh-Konda-SmartTaggingMeetsStructuredContentRedefiningMetadataForAI-PoweredEcosystems.pdf	Kurt Vincent M. Velasco	Include	

4.3 PRISMA Flow Diagram



*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).

**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.