**Augmented Reality-Based Business Cards on Android Devices for LPU-Cavite With Optimized Tracking Using Kalman Filter Algorithm**

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***Abstract –*** *This study introduces PartnAR, an Augmented Reality-based business card system designed to help employees connect more effectively with potential partners, collaborators, or clients through engaging business card presentation by optimizing AR tracking using Kalman Filter Algorithm. The system allows dynamic updates of employee and university information through a content management system, maintaining relevance and enhancing professional credibility. With an RMSE of 0.05, tracking jitter of 0.07, detection rate of 88.56%, and processing time of 0.000134 seconds per frame, the evaluation showed that the standard Kalman Filter algorithm produced the best performance. These findings imply that the Kalman Filter performs well in real-time augmented reality applications while successfully maximizing tracking and noise reduction. The functionality and compatibility testing yielded a result of 100% pass rate across 135 test cases, wherein the CMS and mobile application received a rating of “Highly Acceptable” based on the ISO/IEC 25010 model (grand mean: 3.52) and MARS (grand mean: 3.59) respectively. The final evaluation, which involved different roles such as employees, administrators, IT Experts, and HR personnel from external companies showed a strong support to the usefulness, aesthetic appeal, and potential of the system for enhancing professional networking. The recommendations include allowing user-uploaded models through the CMS, improving text recognition accuracy, adding iOS support, and storing 3D models in the cloud.*

***Keywords –*** *Provide 3-5 keywords or phrases in alphabetical order, separated by commas.*

**Introduction (JC)**

Augmented Reality is one of the technologies that continue to revolutionize many industries by connecting the physical and digital world. AR continues to be adopted in various fields such as education, marketing, and networking. Qadri et al. [1] stated that Augmented Reality serves as a tool for developing an engaging and interactive experience to draw the attention of potential patrons. Moreover, Mitrovic Et al. [2] emphasizes that AR contributes to brand awareness and customer interaction by overlaying digital versions of products and services in the physical world. Additionally, Alsomali S. [3] AR has become a valuable medium has provided several solutions for engagement and communication, which gives advantage to universities and its employees by providing an interactive approach for conveying information.

Traditional business cards are used for conveying static information to clients and customers. However, this poses a significant disadvantage as it lacks a dynamic approach for updating information, thus resulting in high costs and inefficiency. Furthermore, Sankpal et al. [4] explained that communication tools often reduce its purpose due to its lack of interactivity and engagement for potential recipients. Kamate et al. [5] said also indicated that printing costs serve as one of the significant issues in physical cards since changing designs and information can lead to increased expenses.

The researchers conducted a survey among 39 employees from the Lyceum of the Philippines University of Cavite. The result showed that 94.87% gave a strong support in having AR business cards, and 82.05% agreed that traditional business cards are outdated and need modernization through AR technology. Additionally, 97.43% believed that the engagement and interaction in professional networking can be enhanced using AR, and 94.87% said that using AR business cards can help LPU-Cavite be presented as a technologically advanced institution.

To address the issues mentioned and the needs identified in the survey, the research aims to combine AR and traditional business cards to dynamically updated information and enhance engagement and interaction in networking. Through AR technology, the university will be able to provide a more immersive and interactive experience while improving brand presence and creating a lasting impression on potential clients. Furthermore, the project will utilize the Kalman Filter algorithm to enhance AR tracking accuracy and stability by reducing jitters, thereby improving the overall AR experience.

**Objectives of the Study (JC)**

**Methodology**

**Research Framework (JC)**

**Phase 1: Problem Definition (JC)**

**Phase 2: Objectives (JC)**

**Phase 3: Artifact Design**

**Phase 4: Evaluation**

**Phase 5: Problem Solution (JC)**

**Phase 6: Contribution**

**Participants and Sampling**

**System Architecture**

**System Development Process**

**Instrumentation and Validation**

**Data Collection Procedure**

**Data Analysis**

Describe the research method used in the study. Discuss comprehensively the sampling technique used in selecting the participants if the study will not use the total population. It is very important to explain the generation and validation of instrument. If the questionnaire or any data gathering instrument used is not standardized, explain further the reliability tests or validation procedures have done in the instrument. The Data Collection Procedure must also be well defined. The statistical tools used in the study must be well explained in the Data Analysis part. Ethical Considerations (if applicable) is also considered important in informing the participants regarding the purpose of the administration of the instrument or the main purpose of the study. Included here is the proper way of putting sub-headings and its levels.

**Sub-Heading**

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**Results and Discussion**

The contents of the journal are peer-reviewed and archival. The international journal publishes scholarly articles of archival value as well as tutorial expositions and critical reviews of classical subjects and topics of current interest. Authors should consider that the technical papers submitted for publication must advance the state of knowledge and must cite relevant prior work. The length of a submitted paper should be commensurate with the importance, or appropriate to the complexity, of the work. For example, an obvious extension of previously published work might not be appropriate for publication or might be adequately treated in just a few pages. Authors must convince both peer reviewers and the editors of the scientific and technical merit of a paper; the standards of proof are higher when extraordinary or unexpected results are reported.

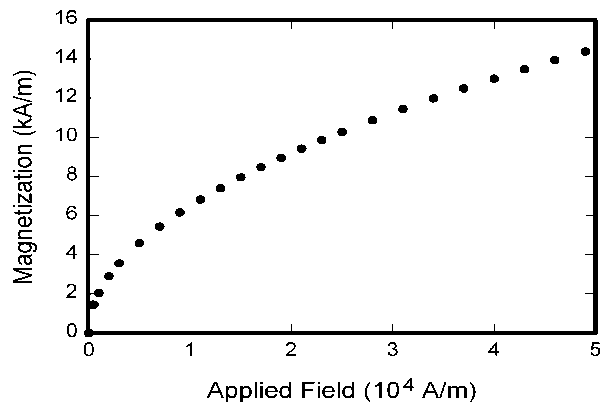
Because replication is required for scientific progress, papers submitted for publication must provide sufficient information to allow readers to perform similar experiments or calculations and use the reported results. Although not everything need be disclosed, a paper must contain new, useable, and fully described information.

**Table 1.** The Arrangement of Channels

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Channels** | **Group 1** | **Group 2** | **…** | **Group *c*** |
| Main channel | Channel 1 | Channel 2 | … | Channel *c* |
| Assistant channel | Channel 2 | Channel 3 | … | Channel 1 |

Tables should follow the institutional format and keep it simple and minimum in number. In tables font size 11 must be used and vertical lines must not be drawn. When the contents of the table cannot fit into the table, font size 10 might be used. Number of the table and the title should be written above the table. Tables (eg, Table 1) are also numbered consecutively, 1, 2, etc., from start to finish of the paper, ignoring sections and subsections, and independently from figures.

**Fig. 1**. Magnetization as a function of applied field.



Figures should be designated with Arabic numerals and upper case letters for their parts (Figure 1). Each legend should begin with a title and should be sufficiently described so that without reading the text, figure should be understandable. All figures, tables, etc. must have a caption, centre-justified. Tables and figures should appear as close to their point of reference as satisfactory formatting of the final document permits.

**Conclusion and Recommendation (JC)**

A conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

Appendix

Appendixes, if needed, appear before the references.

**References**

***Strictly follow the numbered format of citation while observing the proper APA style of referencing.***

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