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**Manuscript ID: JAIT-16841 - Major Revisions**

1 message

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**Ms. Yoyo Chow** <yoyo.chow@ejournal.net>  
To: Pratya Nuankaew <pratya.nu@up.ac.th>

Thu, Mar 27, 2025 at 2:00 PM

**Reviewer 1:**

Comments to Authors:

1. While the accuracy for dosage and timing is high, the paper highlights challenges with drug name recognition (95.65%) and medical indications (94.68%). It would be helpful to explore these challenges further, especially since drug name recognition is critical for patient safety.
2. While the technical aspects of the system are well-explained, the paper does not provide much insight into user feedback, particularly from the elderly individuals using the mobile application. A user-centered evaluation, including how the system interacts with patients and caregivers, would offer more practical value to the research. The study acknowledges that label degradation, such as blurriness or fading, affects OCR performance.
3. The paper could benefit from a deeper exploration of these challenges and potential solutions, such as more advanced preprocessing algorithms or AI-based approaches to handle low-quality images. Including qualitative feedback from elderly users, caregivers, or healthcare providers could provide valuable insights into the system's usability and effectiveness in real-world scenarios. Given the challenges with degraded labels, implementing more sophisticated preprocessing techniques such as adaptive machine learning algorithms could improve the OCR system's robustness and accuracy, especially under suboptimal conditions.

**Reviewer 2:**

Comments to Authors:

1. **Lack of User-Centered Evaluation:**
  - The system targets visually impaired elderly users, but there is no usability testing or feedback reported. A user study involving target end-users would strengthen the paper significantly.
2. **Limited Comparative Analysis:**
  - A comparative evaluation with existing applications or OCR-based solutions for healthcare (in terms of performance or features) would contextualize the proposed system's contribution.
3. **Medical Indication Recognition Needs Improvement:**
  - This component shows the lowest accuracy (94.68%) and highest CER (5.61%). Consider incorporating advanced NLP techniques, possibly leveraging pre-trained language models for domain-specific NER.
4. **Multilingual Scalability Not Addressed:**
  - The system appears optimized for Thai language labels. A discussion on how the approach generalizes to other languages (especially low-resource ones) would be beneficial.
5. **Medication Database Scope Not Detailed:**
  - Clarify whether the medication dictionary is based on national (Thai) data, or if international standards (e.g., DrugBank) are used. This has implications for scalability and integration with other health systems.
6. **Language and Style:**
  - The paper is generally well-written, but some paragraphs (particularly in the introduction and discussion) are overly dense. Shorter, more concise sentences would improve readability.

**Reviewer 3:**

Comments to Authors:

1. Discusses AI applications in healthcare and OCR technology but lacks sufficient comparison with existing methods.
2. Details a multi-phase approach to image capturing, text extraction, validation, and integration into a mobile application; Reports high accuracy rates (97.60% for dosage identification, 95.65% for timing extraction) but acknowledges challenges in drug name recognition; Summarizes contributions and outlines future research directions.
3. The dataset (271 pharmaceutical labels from a single hospital) may not represent diverse real-world variations, including different fonts, languages, and lighting conditions.
4. The study does not compare its approach with existing OCR-based pharmaceutical transcription methods, making it difficult to assess novelty and improvement.
5. While high accuracy is reported, no error analysis is provided to discuss specific failure cases and their

implications.

6. No user study or real-world testing is conducted to assess the effectiveness of the application for elderly individuals.
7. Given that the system handles medical data, the article should discuss data security, patient privacy, and compliance with healthcare regulations.
8. Some technical terms related to OCR, AI models, and error correction are not clearly explained.
9. Citations are somewhat outdated, and recent developments in OCR-based medical informatics could be included.
10. Some sections contain repetitive information, and minor grammatical inconsistencies are present.

#### Reviewer 4:

Comments to Authors:

Please check the attached review comments

Dear Wongpanya S. Nuankaew, Fapraton Jailangka, Atthakit Khampraphai, Apatsara Kamka, Patchara Nasa-Ngium, Praty Nuankaew,

Thank you for submitting your manuscript "AI for Medical Informatics: The Application of Optical Character Recognition Technology in the Transcription of Pharmaceutical Labels" to Journal of Advances in Information Technology.

The editorial team has assessed your submission and feels that it has potential for publication, so we would like to invite you to make major revisions for further review.

You can find your manuscript at the following link:

<https://ojs.ejournal.net/index.php/jait/authorDashboard/submission/16841>

Important notice: Please revise the manuscript according to the reviewers' comments and upload the revised file **within one month. The revisions should be highlighted**, for example using the "Track Changes" function in Microsoft Word, so that changes are easily visible to the editors and reviewers. **Please provide a cover letter** to explain point-by-point the details of the revisions in the manuscript and your responses to the reviewers' comments. (download [author response template](#))

As the reviewer has suggested that your manuscript should **undergo extensive English editing**, please address this during revision. We suggest that you have your manuscript checked by a native English-speaking colleague or use a professional English editing service.

Instruction for uploading the revised version can be found at: <https://docs.pkp.sfu.ca/learning-ojs/en/authoring>.

Do not hesitate to contact us if you have any questions regarding the revision of your manuscript.

Ms. Yoyo Chow

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Review of the Paper.pdf

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