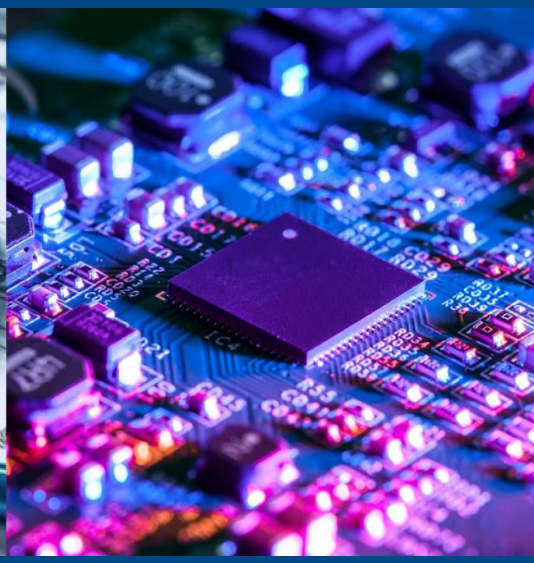
ISSN: 2582-7219





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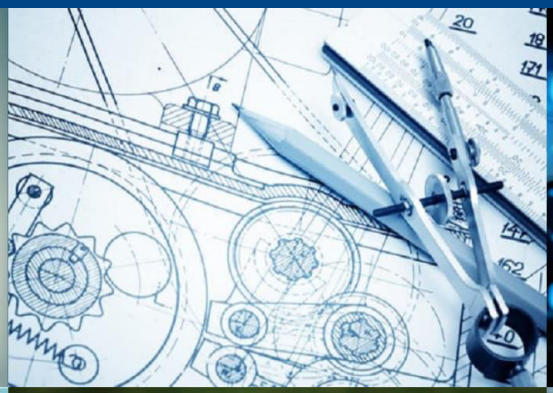

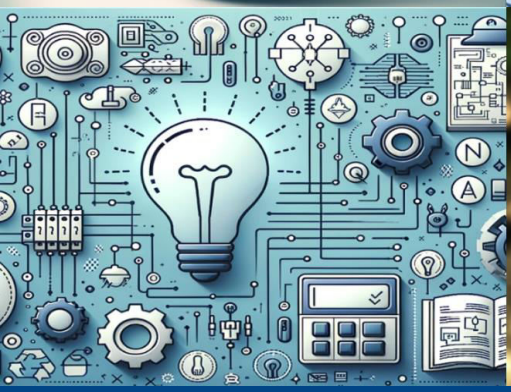

Impact Factor: 8.206 **Volume 8, Issue 6, June 2025**

© 2025 IJMRSET | Volume 8, Issue 6, June 2025| DOI:10.15680/IJMRSET.2025.0806246

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

AI-Powered Conversion of Hand-Drawn UI Sketches to Functional Wireframes and Code

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ABSTRACT: Despite the availability of advanced UI design tools, many designers prefer hand-drawn sketches due to the steep learning curve and complexity of these software applications. This paper proposes an AI-based solution that bridges the gap between manual sketches and digital interface development. The proposed system can convert rough hand-drawn UI sketches into functional wireframes and generate code in formats like HTML, React, Angular, Vue, or TypeScript.

Current challenges in the UI design process include the time-consuming and labor-intensive nature of creating wireframes, as well as the disconnect between designers' creative ideas and developers' need for implementable code. To address these issues, the AI-powered tool introduced in this paper leverages generative language models to automatically transform designers' design intent, expressed through sketches and brief descriptions, into ready-to-use UI components.

The system utilizes computer vision and deep learning techniques to recognize and interpret hand-drawn UI elements, specifically employing Convolutional Neural Networks (CNNs) for image recognition. These techniques ensure that the sketches' shapes and layouts are accurately captured and interpreted, allowing for precise mapping to corresponding digital components. The resulting wireframes can be further refined and customized by the designer, and the final UI code can be generated in various programming languages, bridging the gap between design and development.

Through a series of case studies and user evaluations, this paper demonstrates the practicality and efficiency of the proposed AI-driven UI design tool. Additionally, user feedback mechanisms are in place to validate the accuracy and fidelity of the wireframes and code generated by the system, which continuously learn and adapt based on real-world usage.

KEYWORDS: AI-powered design tools; hand-drawn UI sketches; sketch-to-code conversion; user interface automation; wireframe generation; computer vision in UI design; deep learning for GUI recognition; automatic code generation; convolutional neural networks (CNNs); natural language processing (NLP); generative UI models; front-end development; low-fidelity to high-fidelity prototyping; design-to-code translation; intelligent UI suggestions.

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I. INTRODUCTION

Despite the availability of advanced UI design software tools, many designers continue to favor hand-drawn sketches due to the steep learning curve and complexity associated with mastering these digital applications. This paper proposes an AI-powered solution that aims to bridge the gap between manual sketching and digital interface development. The introduced system can automatically convert rough hand-drawn UI sketches into functional wireframes and generate code in various formats, including HTML, React, Angular, Vue, and TypeScript.

By leveraging AI, this tool addresses the needs of both designers and developers, providing an intuitive way to transform creative ideas into ready-to-use UI code. The goal is to simplify the UI development process, allowing designers to focus on their creativity rather than the technicalities of design software.

The proposed AI-powered tool offers a comprehensive solution to the challenges faced by designers and developers in the UI design and development process. By empowering designers to create rough UI sketches on paper and upload them, the system can leverage computer vision and deep learning techniques to recognize and interpret the hand-drawn elements, such as buttons, menus, and layouts. This includes using CNNs to ensure accuracy, allowing for precise mapping to corresponding digital components.

The resulting wireframes can then be further refined and customized by the designer, with the final UI code generated in various programming languages that seamlessly bridge the gap between design and development.
This approach streamlines the ideation process, allowing designers to quickly sketch their ideas without being constrained by the limitations of digital design software, while automating the creation of functional wireframes and front-end code, saving time and effort. Additionally, the tool's ability to provide AI-powered design suggestions and recommendations for color schemes, layout adjustments, and alternative UI patterns further enhances the design process, ensuring a more efficient and collaborative workflow between designers and developers.

II. PROBLEM STATEMENT

Despite advancements in UI design software, many designers still rely on hand-drawn sketches for initial ideation due to several factors:

- Complexity and Steep Learning Curve: Cutting-edge tools like Figma, Adobe XD, and Sketch feature intricate interfaces that pose challenges for beginners and can be time-consuming for experienced designers to master.
- Limited Flexibility for Rapid Ideation: These digital applications may constrain creativity during the early brainstorming stages because of predefined components and rigid workflows.
- Inefficiency in Translating Ideas into Code: Even after a design is finalized, the process of converting wireframes into functional code remains tedious, often requiring manual work or reliance on separate development teams.
- This disconnect between the design and implementation phases highlights the need for a tool that can seamlessly bridge the gap by converting hand-drawn sketches into digital wireframes and code, addressing the challenges of complexity, time, and flexibility.

III. PROPOSED SOLUTION

The proposed AI-powered tool offers a comprehensive solution to these challenges by empowering designers in several ways:

- Designers can create rough UI sketches on paper and easily upload images of these sketches, allowing them to utilize their natural hand-drawing abilities without the constraints of complex digital design software.
- The system enables designers to use natural annotations and descriptions to label the UI components within their sketches, providing the necessary context for the AI-powered interpretation.
- Based on the provided sketches and annotations, the tool can generate interactive wireframes and produce front-end code in various formats, including HTML, React, Angular, Vue, or TypeScript.
- By harnessing the power of computer vision and deep learning techniques, the system recognizes and interprets hand-drawn UI elements, such as buttons, menus, and layouts, and maps them to corresponding digital components. Designers can then further refine and customize the resulting wireframes, with the final UI code generated in various programming languages, seamlessly linking design and development.

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Key Benefits of the AI-Driven UI Design Tool:

- Streamlined Ideation: Designers can quickly sketch their ideas without being limited by the complexities of digital software, allowing them to focus on creativity.
- Automated UI Generation: The system automatically converts hand-drawn sketches into functional wireframes and generates production-ready front-end code, saving designers and developers significant time and effort.
- Improved Collaboration: The tool enables seamless communication and handoff between designers and developers, reducing misunderstandings and rework, and fostering a more efficient collaborative workflow.
- Enhanced Design Quality: The AI-powered system can provide design suggestions and recommendations for color schemes, layout adjustments, and alternative UI patterns, helping to ensure a high-quality and visually appealing final product.

Key Features:

- Sketch-to-Wireframe Conversion: The system leverages computer vision and deep learning techniques to detect and interpret hand-drawn UI components, such as buttons, text boxes, containers, and labels, and automatically create interactive elements with specific behaviors based on the provided annotations.
- Automated Code Generation: The tool generates front-end code in the desired format, including HTML, React, Angular, Vue, or TypeScript, based on the created wireframes, thereby reducing the manual coding effort required from developers.
- AI-Powered Design Suggestions: The system analyzes the design context and provides recommendations for color schemes, layout adjustments, and alternative UI patterns that users can choose to incorporate or disregard as per their preference.
- Cross-Platform Layout Customization: The tool adapts the design layout to ensure optimal presentation on the target platform and application type.
- Interactive Modifications: Users can interactively refine the design elements through a text or voice interface, with real-time updates to the wireframe and corresponding code.

IV. RELATED WORK

While commercial tools such as Microsoft's **Sketch2Code** and **screenshot2code** introduced early efforts to bridge the gap between design and development, they are now either discontinued or offer limited functionality. These tools largely focused on digitizing computer-generated artboards from platforms like Figma or Sketch and lacked support for raw, hand-drawn sketches. In contrast, the proposed solution directly targets the freeform nature of hand-drawn UI inputs, expanding support beyond typical structured design tools.

Several recent academic efforts have attempted to generate code from sketches using deep learning and computer vision. For instance, **Feng et al. (2023)** and **Lu et al. (2024)** proposed AI-based systems to transform manual sketches into interface code, while **Gajjar et al. (2021)** developed a pattern-based generator called Akin. **Yun et al. (2018)** and **Rahmadi & Sudaryanto (2020)** focused on the detection and classification of GUI components using deep neural networks. Similarly, **Feng et al. (2021)** introduced GUIS2Code, an approach leveraging computer vision for sketch-to-code conversion. **Lohana et al. (2022)** and **Adefris et al. (2022)** applied convolutional neural networks and transfer learning to infer code from low-fidelity UI sketches, contributing to improved automation in this space. Additionally, **Sonje et al. (2022)** presented draw2code, an AI-based auto-generation tool from mock-up pages, and **Cai et al. (2023)** demonstrated a novel code generator validated in *Scientific Reports*.

Despite these contributions, many existing systems either focus narrowly on component recognition or lack advanced user-interaction features. The proposed tool differentiates itself by providing a more comprehensive and interactive experience—supporting multiple output frameworks, suggesting intelligent design refinements, and enabling real-time modifications. It integrates state-of-the-art AI-driven techniques for annotation, pattern recognition, and code generation, delivering a scalable and flexible bridge between manual UI ideation and functional prototypes. This holistic approach provides designers and developers with a robust toolchain that surpasses prior solutions in both scope and usability.

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V. METHODOLOGY

The proposed solution utilizes a combination of image recognition, natural language processing, and AI-powered design recommendation algorithms. The workflow encompasses the following key steps:

1. **Image Recognition:** The system employs deep learning-based object detection models to scan and identify UI components within the hand-drawn sketches.
2. **NLP for Component Annotation:** The tool leverages natural language processing techniques to interpret handwritten annotations and label the components, as well as assign corresponding behaviors.
3. **Design Synthesis:** AI models are utilized to analyze the design and offer optimized layouts, color schemes, and element placements based on best practices.
4. **Code Generation:** The synthesized design is then converted into code in the specified framework, ready for integration into development environments.

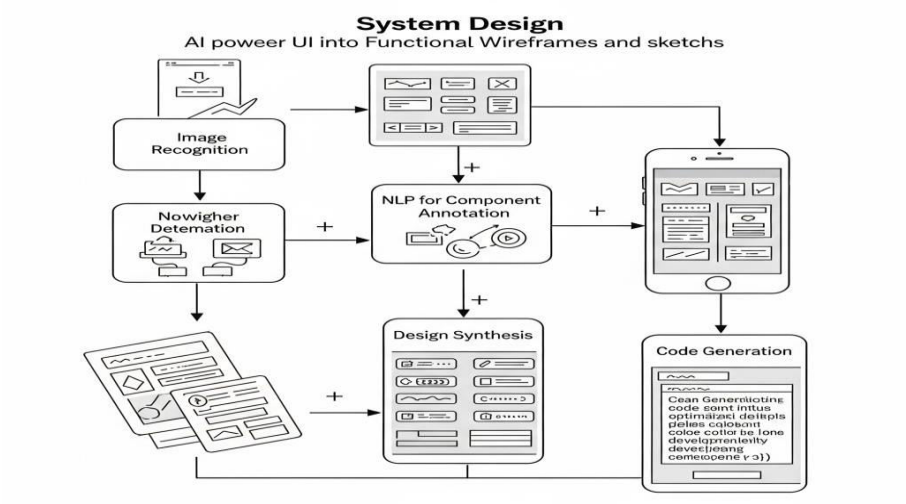

Fig 1: System design

VI. USE CASES

1. **Rapid Prototyping for Startups:** Early-stage organizations can swiftly visualize their product concepts by sketching interfaces on paper and directly converting them into functional prototypes.
2. **Empowered Creativity for Designers:** Designers can concentrate on creative ideation without being hindered by software complexities. They can refine their ideas on paper and easily translate them into digital interfaces for further refinement.
3. **Collaborative Ideation in Design Teams:** Design teams can brainstorm ideas using traditional whiteboards or notepads, then digitize the outputs into interactive wireframes and code, facilitating accelerated iterations.
4. **Accessibility for Non-Technical Stakeholders:** Product managers and business stakeholders lacking technical expertise can sketch ideas, annotate basic behaviors, and instantly see a working interface, enhancing communication and reducing feedback loops.

VII. EXAMPLE

To validate the functionality of the proposed prototype system for automatic UI generation, a simple hand-drawn form was used as the input. The sketch consisted of common UI components such as a text field, radio buttons, a bordered section, a drop-down list, a checkbox, and a submit button.

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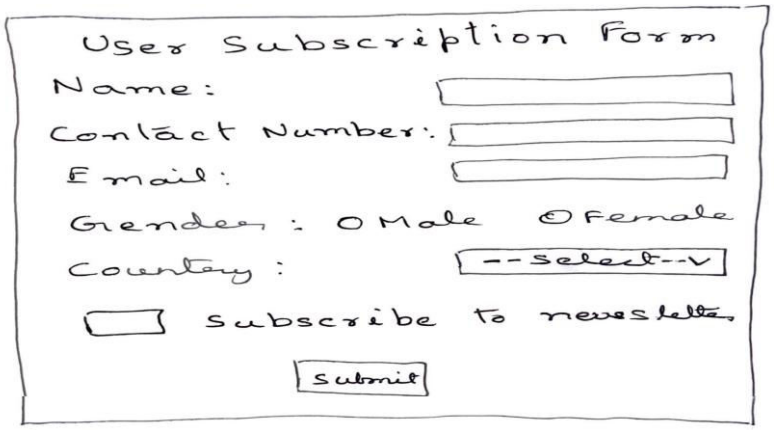

fig2: Simple hand drawn form

This hand-drawn form was fed into the system, which successfully interpreted the visual elements and translated them into a fully functional HTML-based web form. The generated output preserved the structural layout and interactive functionality depicted in the original drawing. The resulting HTML code, rendered as a user interface in the browser, confirms the system's capability to accurately convert visual form designs into operational code, demonstrating its effectiveness for low-fidelity to high-fidelity UI prototyping.

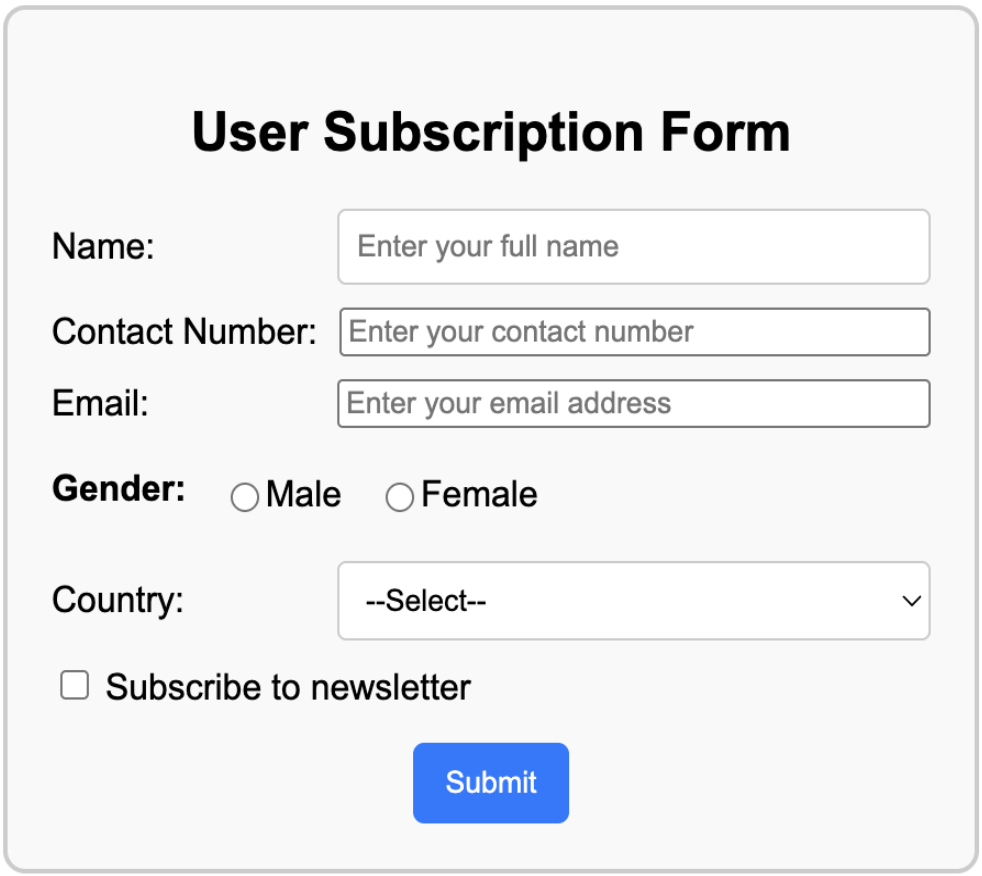

Fig 3: System generated UI (html)

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Here is the html code it generated

```
<!DOCTYPE html>
<html lang="en">
<head>
 <meta charset="UTF-8">
 <title>Simple Form</title>
 <style>
  body {
   font-family: Arial, sans-serif;
   margin: 20px;
  }
  form {
   border: 2px solid #ccc;
   padding: 20px;
   width: 400px;
   border-radius: 10px;
   background-color: #f9f9f9;
  }
  label {
   display: block;
   margin: 10px 0 5px;
  }
  input[type="text"], select {
   width: 100%;
   padding: 8px;
   margin-bottom: 10px;
   border-radius: 4px;
   border: 1px solid #ccc;
  }
  .radio-group, .checkbox-group {
   margin-bottom: 15px;
  }
  .submit-btn {
   background-color: #007bff;
   color: white;
   border: none;
   padding: 10px 15px;
   border-radius: 5px;
   cursor: pointer;
  }
  .submit-btn:hover {
   background-color: #0056b3;
  }
  .radio-group {
   display: flex;
   align-items: center;
   margin-bottom: 15px;
  }
  .gender-label {
   margin-right: 15px;
   font-weight: bold;
  }
  .radio-inline {
```

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```
    display: inline-flex;
    align-items: center;
    margin-right: 15px;
    font-weight: normal;
   }
   label[for="name"], label[for="country"] {
    display: block;
    margin: 10px 0 5px;
   }
   .form-row {
    display: flex;
    align-items: center;
    margin-bottom: 10px;
   }
   .form-row label {
    min-width: 120px;
    margin: 0 10px 0 0;
    display: inline-block;
   }
   .form-row input,
   .form-row select {
    flex: 1;
    margin: 0;
   }
  </style>
 </head>
 <body>

  <form action="#" method="post">
   <h2 style="text-align: center;">User Subscription Form</h2>

   <div class="form-row">
    <label for="name">Name:</label>
    <input type="text" id="name" name="name" placeholder="Enter your full name">
   </div>

   <div class="form-row">
    <label for="contact">Contact Number:</label>
    <input type="tel" id="contact" name="contact" placeholder="Enter your contact number">
   </div>

   <div class="form-row">
    <label for="email">Email:</label>
    <input type="email" id="email" name="email" placeholder="Enter your email address">
   </div>

   <div class="radio-group">
    <span class="gender-label">Gender:</span>
    <label class="radio-inline">
     <input type="radio" id="male" name="gender" value="Male"> Male
    </label>
    <label class="radio-inline">
     <input type="radio" id="female" name="gender" value="Female"> Female
    </label>
   </div>
```

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```
  <div class="form-row">
    <label for="country">Country:</label>
    <select id="country" name="country">
      <option value="">--Select--</option>
      <option value="usa">USA</option>
      <option value="canada">Canada</option>
      <option value="uk">UK</option>
      <option value="india">India</option>
    </select>
  </div>

  <div class="checkbox-group">
    <label>
      <input type="checkbox" name="subscribe" value="yes">
      Subscribe to newsletter
    </label>
  </div>
  <div style="text-align: center;">
    <button type="submit" class="submit-btn">Submit</button>
  </div>
 </form>
</body>
</html>
```

VIII. EVALUATION AND RESULTS

The effectiveness of the proposed AI-based UI design tool was evaluated through a user study involving a diverse group of designers and developers. The participants were tasked with completing various design activities, such as sketching UI concepts, annotating the sketches, and validating the automatically generated wireframes and code.

The evaluation metrics included:

- Time required to complete the design process from ideation to code generation
- User satisfaction scores from both designers and non-designers
- Accuracy of component recognition and code generation
- Qualitative feedback on the tool's intuitiveness, flexibility, and impact on the design-development workflow

The study revealed several key findings:

1. **Time Savings:**
   - Designers experienced an **average time reduction of 35%** when converting hand-drawn sketches into digital wireframes and functional code compared to traditional design workflows.
   - This reduction helps streamline the UI design process, allowing quicker ideation-to-execution transition.

2. **Developer Productivity Boost:**
   - Developers reported a **25% increase in productivity**, as the generated code adhered to best practices, requiring less manual coding effort.
   - The tool minimizes back-and-forth adjustments, ensuring more efficient implementation of design ideas.

3. **Collaboration Efficiency:**
   - Improved collaboration between designers and developers, with fewer feedback loops due to better design-to-code integration, fostering a more cohesive and responsive workflow.
   - This reduction in feedback cycles contributes to faster project completion and a more collaborative environment.

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4. User Satisfaction:

- High satisfaction scores from both designers and developers. Designers praised the tool's flexibility and ability to maintain their creative intent, while developers appreciated the accuracy of the generated code.

5. Automation Impact:

- The automatic recognition and translation of UI elements into wireframes and code saved significant manual effort, effectively reducing design time while improving the precision of the final implementation.

The results of the study demonstrated significant time savings, improved collaboration, and high user satisfaction compared to traditional design and development processes. Designers reported an increased focus on ideation and creativity, while developers appreciated the reduction in manual coding efforts and the ability to work with more detailed and accurate design specifications.

Overall, the study indicates that the proposed AI-based UI design tool has the potential to bridge the gap between manual sketches and digital interface development, empowering both designers and developers to streamline their workflows and enhance the design-to-code process.

IX. CONCLUSION AND FUTURE DIRECTIONS

The proposed AI-powered UI design tool offers a compelling solution to address the key challenges faced by designers and developers in the user interface development process.

- By leveraging the capabilities of AI in areas such as image recognition, natural language processing, and design optimization, the tool enables a seamless transition from hand-drawn sketches to functional, code-ready interfaces.
- By allowing designers and non-designers alike to convert hand-drawn concepts into functioning interfaces with minimal technical overhead, this solution has the potential to revolutionize UI development workflows.
- The evaluation results demonstrate significant improvements in productivity, collaboration, and user satisfaction, indicating the tool's promise as an innovative solution for the design and development communities.
- The positive findings of the user study showcase the tool's practicality and suggest substantial opportunities for further research and development in this domain.
- As the industry continues to evolve, the integration of AI-powered solutions like the one proposed in this paper will play an increasingly important role in empowering designers, streamlining development workflows, and ultimately, delivering better user experiences.
- As the world is moving towards no code solutions, any one who has an idea can be able to create software tools based on their creativity without fearing to learn complex design and coding software.

Future research directions will likely focus on expanding support for more complex components, refining AI-driven design suggestions, and integrating real-time collaboration features. The tool could also be extended to include AR/VR design capabilities and integration with popular design and development platforms.

Additionally, future work could explore the incorporation of advanced AI techniques, such as generative models, to enhance the design generation capabilities, as well as expand the supported output formats to cater to a wider range of development frameworks and platforms.

This paper outlines a comprehensive approach to addressing the challenges faced by designers in the UI design process, offering a tool that promises to streamline ideation, prototyping, and development through AI-powered innovations. The research contributes to the growing body of work on the intersection of AI and design, highlighting the potential for AI-based solutions to augment and empower designers, while also benefiting the broader software development ecosystem

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REFERENCES

1. Feng, F., Lin, F., & Lee, F. (2023). *AI-based solution for bridging manual sketches and digital interface development*.
2. Lin, L.-C., & Lee, W. O. (2007). UI toolkit for non-designers in the enterprise applications industry. *CHI '07 Extended Abstracts on Human Factors in Computing Systems*, 1795–1804. https://doi.org/10.1145/1240866.1240902
3. Gajjar, N., Sermuga Pandian, V. P., Suleri, S., & Jarke, M. (2021). Akin: Generating UI wireframes from UI design patterns using deep learning. *Companion Proceedings of the 26th International Conference on Intelligent User Interfaces*, 40–42. https://doi.org/10.1145/3397482.3450727
4. Lu, Y., Tong, Z., Zhao, Q., Oh, Y., Wang, B., & Li, T. J.-J. (2024). Flowy: Supporting UX design decisions through AI-driven pattern annotation in multi-screen user flows. *arXiv preprint*. https://arxiv.org/abs/2406.16177
5. Fu, L., & Kara, L. B. (2009). Recognizing network-like hand-drawn sketches: A convolutional neural network approach. *Design Automation Conference*, 671–681. https://doi.org/10.1115/DETC2009-87402
6. Hayat, S., She, K., Mateen, M., & Yu, Y. (2019). Deep CNN-based features for hand-drawn sketch recognition via transfer learning approach. *International Journal of Advanced Computer Science and Applications (IJACSA)*, 10(9). https://doi.org/10.14569/IJACSA.2019.0100958
7. Yun, Y.-S., Jung, J., Eun, S., So, S.-S., & Heo, J. (2018). Detection of GUI elements on sketch images using object detector based on deep neural networks. In *Intelligent Information and Database Systems* (pp. 86–90). Springer, Singapore. https://doi.org/10.1007/978-981-13-0311-1_16
8. Rahmadi, A. A., & Sudaryanto, A. (2020). Visual recognition of graphical user interface components using deep learning technique. *Jurnal Ilmiah Komputer dan Informatika (JIKI)*, 13(1), 35–45. https://doi.org/10.21609/JIKI.V13I1.845
9. Feng, Z., Fang, J., Cai, B., & Zhang, Y. (2021). GUIS2Code: A computer vision tool to generate code automatically from graphical user interface sketches. In *Advances in Computer Vision* (pp. 53–65). Springer, Cham. https://doi.org/10.1007/978-3-030-86365-4_5
10. Cai, B., Luo, J., & Feng, Z. (2023). A novel code generator for graphical user interfaces. *Scientific Reports*, 13(1). https://doi.org/10.1038/s41598-023-46500-6
11. Lohana, B., Tanna, M., Pamnani, G., Sahijwani, T., & Temkar, R. (2022). A deep learning approach for generating mark-up code from sketch images. *International Journal for Research in Applied Science and Engineering Technology*, 10(4), 235–238. https://doi.org/10.22214/ijraset.2022.40675
12. Adefris, B. B., Habtie, A. B., & Taye, Y. G. (2022). Automatic code generation from low fidelity graphical user interface sketches using deep learning. *EAI International Conference on ICT for Development for Africa (ICT4DA)*, 1–6. https://doi.org/10.1109/ICT4DA56482.2022.9971204
13. Adefris, B. B., Habtie, A. B., & Taye, Y. G. (2022). Automatic code generation from low fidelity graphical user interface sketches using deep learning. *2022 International Conference on Information and Communication Technology for Development for Africa (ICT4DA)*, Bahir Dar, Ethiopia, 1–6. https://doi.org/10.1109/ICT4DA56482.2022.9971204
14. Sonje, S. A., Dave, H., Pardeshi, J., & Chaudhari, S. (2022). draw2code: AI-based auto web page generation from hand-drawn page mock-up. *2022 IEEE 7th International Conference for Convergence in Technology (I2CT)*, 1–7. https://doi.org/10.1109/i2ct54291.2022.9824521

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