CS484
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DineOps
Smart Restaurant

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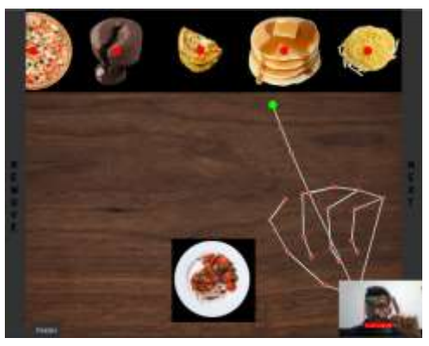
Project ID: **41 - 3**

Introduction

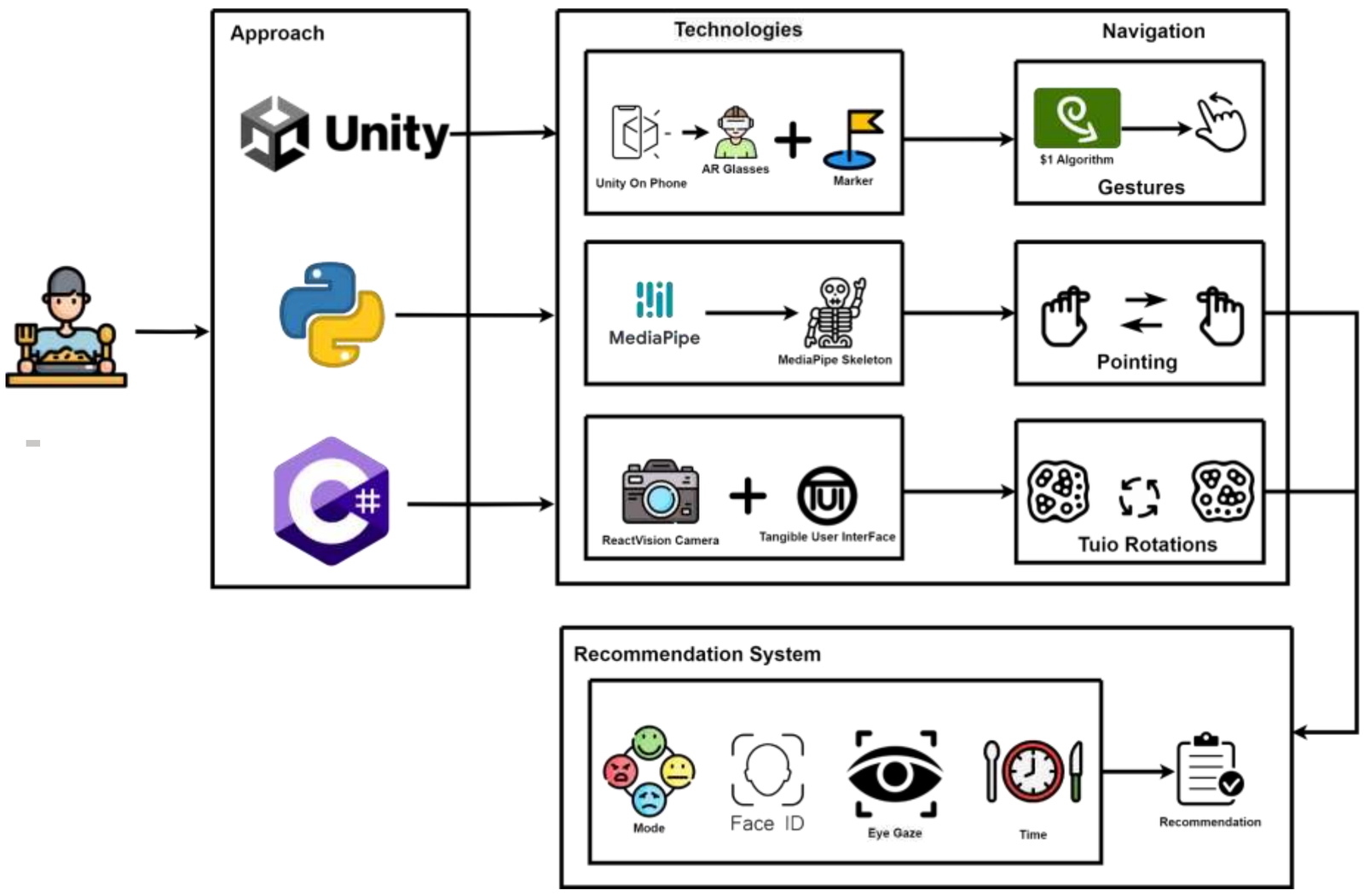
Introducing Dineops – the next evolution in restaurant technology. Dineops redefines the dining experience by streamlining menu navigation for patrons through three innovative approaches. First, leveraging TUIO object markers with C#, customers effortlessly explore menus. Second, using Python, patrons navigate menus by pointing in front of their table, selecting items with a simple gesture. Finally, our Unity-powered solution integrates markers and hand gestures for a fully immersive menu interaction. Dineops brings convenience and engagement to the forefront, revolutionizing how patrons interact with restaurant menus. Say hello to the future of dining with Dineops.

System UI





System Architecture



Tools

CSV, TUIO, Visual Studio, Unity, YOLOv8, C#, deepFace, Dlib + OpenCV, Python

Contacts

Results

In the conducted experiment, involving the participation of 10 individuals, distinct insights emerged regarding the effectiveness of Dineops' various approaches. Notably, the Unity-powered interaction was well-received for its novelty; however, feedback indicated a need for enhancements to optimize user experience. On the contrary, the Python approach stood out as the most effective and practical, garnering positive responses from participants. These results underscore the potential of Dineops to redefine menu interaction in restaurant settings, with a focus on refining and further leveraging the practical advantages offered by the Python-based navigation approach.

References

https://depts.washington.edu/acelab/proj/dollar/index.html

https://viso.ai/computer-vision/deepface/

https://github.com/ultralytics/ultralytics

https://opencv.org/

http://dlib.net/

Conclusion

In conclusion, Dineops presents a significant advancement in restaurant technology, with insights from 10 participants highlighting its potential to reshape the dining experience. While the Unity-powered interaction impressed with novelty, feedback suggests enhancements are needed for optimal user experience. Conversely, the Python-based navigation emerged as the most effective and practical, praised for simplicity. These findings underscore Dineops' capacity to revolutionize menu interaction, emphasizing the need to refine the Python-based approach for broader adoption. Continued iteration is crucial for Dineops to solidify its position as the future of dining technology, promising unparalleled convenience and engagement for patrons globally.