Visualizing sailing regatta events in Sailing+

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INTRODUCTION

- Sailing+: AR/VR application for visualizing sailing competitions
- Key moments in a race need to be summarized
- Race events should be displayed in a way that captures the attention of the users

RESEARCH QUESTIONS

"**How can interesting race events be visualized in time and space, using thumbnails, to help with user interaction, engagement and understanding?**".
(1) How can photographic and cinematographic techniques be applied to provide an engaging visualization of race events?
(2) How can useful information in a race event be showcased in an informative way?
(3) How can a user interactively select their preferred image from a thumbnail animation?

Scan to see the animated thumbnails!

METHODOLOGY

- Animated thumbnails
- The animation transitions between two types of views
- The animation starts with an artistic view that contains cinematographic effects, such as depth of field
- It then switches to an informative view that disables those effects and instead displays important event information
- The animation finishes by transitioning back to an artistic visualization
- Event thumbnails are captured as frames and merged into a video
- The thumbnails are placed next to the race timeline, as static shots
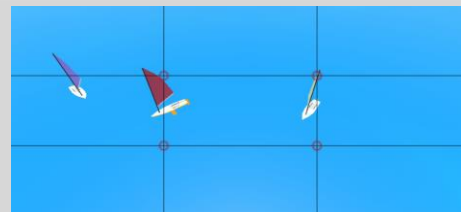- The user can start the animation using the play button or select a static frame of their preference

Figure 1: Beginning frame of an artistic view, chosen according to the rule of thirds

RESULTS

Figure 2: Visualization of an Incident event

Figure 3: Visualization of a Wind Shadow event
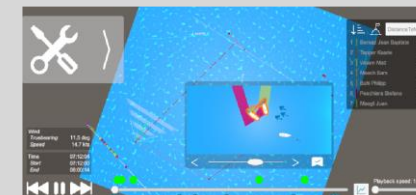
Figure 4: Thumbnail representing an Incident event

Figure 5: Frame selection view of the thumbnail in Figure 4

FUTURE WORK

- The approach can be improved by taking into account more constraints when placing the camera, for example if a mark is nearby the event, it should be visible
- Camera movement could be smoothened by using Bézier curves [1]
- Motion blur can be implemented by adding the effect to each individual frame in an animation [2]

References

[1] Senay Baydas and Bulent Karakas. 2019. Defining a curve as a Bezier curve. Journal of Taibah University for Science 13, 1 (2019), 522–528.
[2] Xuejiao Luo, Nestor Z. Salamon, and Elmar Eisemann. 2018. Adding Motion Blur to Still Images. In Proceedings of Graphics Interface 2018 (Toronto, Ontario) (GI 2018). Canadian Human-Computer Communications Society/Soci´et´e canadienne du dialogue humain-machine, 108 – 114.