Run With Me – Designing Storytelling Tools for Runners

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Abstract

In this paper we explore storytelling tools for runners. We believe sharing third person 360-degree live-streams and stories while running can be a motivational factor to get people more active. To this end, we conducted a couple of initial user tests, exploring if live-streaming runs on popular streaming sites can be engaging for the audience. To make the streams more immersive, we experiment with 360 degree and third person view. We present and evaluate an initial hardware setup for 360-degree video streaming running stories.

Author Keywords

Storytelling, Running, 360 Degree Video, Immersion.

ACM Classification Keywords

H.5.m [Information interfaces and presentation (e.g., HCI)]: Miscellaneous

Introduction

Many people find it hard to get out of their comfort zones, up from their bed, or off their couch to go out for a refreshing sports activity such as running. Moreover, many of those occasional runners find it difficult to incorporate such activities into a habit. This paper explores new ways to utilize existing tools to tell and experience stories differently in the context of performing sports, primarily running. Tar-



Figure 1: Pictures from the initial prototype for 360 degree, third person video streaming

geted towards storytellers who would like to become fit and active, exploring new places, acquiring new information, while telling compelling stories for themselves to keep or share them with friends and family and inspire the world.

Our research goal is to help people engage and enjoy running and similar activities with each run while telling compelling stories for others to enjoy or for themselves to remember. We especially want to explore if live-streaming while running can motivate people and create communities. We have a particular interest in 360-degree and third person view which we will explain in detail later.

This paper is an initial step towards this direction. Our contributions are as follows (1) we present our approach to storytelling while running for motivation, (2) we show for a first use case how running- storytelling might work as an engagement tool, (3) we describe and evaluate an initial hardware prototype for 360-degrees, third person view livestreaming.

Related Work

There are a lot of technologies and research that focus on making running more enjoyable. Most notable may be Graether et al.'s efforts using drones as a motivational tool [2].

On the commercial side, there are step counters like Fitbit or other life-logging technologies, yet they usually focus on self-reflection (with only limited community involvement).

The closest to our approach might be "Zombies, Run!", A game involving storytelling to motivate an individual to workout while immersing them into the running activity. However, they apply storytelling as a one-way individual consumption, not in a live and community context. There are, of course, many efforts using 360-degree cameras and also third person videos for a whole variety of activities, also including sports

Mostly for experience sharing; Usually without intention for engaging motivational storytelling. This is strange, as indications are showing that third person view logging could increase the memorability of events. [1].

Approach

Performing an activity such as running should not be a lonely or an isolated act. There is much more potential that can be utilized by both performers and active audiences consuming these stories to become motivated for running.

Video sharing and live-streaming can be a very engaging means of storytelling and helps to form communities, as seen by popular sites e.g. Snapchat, Periscope.

Can we use live-streams to motivate users to run more and be more active?

We focus on running, as it's a sport that can be performed anywhere and also invites for exploration. It can be done with minimum gear and could be done in different places making regular live-streams more interesting.

Regarding recordings, there are only a few papers assessing camera-placement for life-logging [3]. Here, life-loggers seem to prefer the 3rd person view if it is available. Interestingly, also memorability and immersion are quite high for third person view [1].

Initial Explorations

We want to know if people can be motivated to move more when watching running through live-streams. However, for initial explorations, we just focused on whether a livestreamed run can be engaging to the audience. We performed two use tests on a popular live-streaming service.

Our second hypothesis is that third person video will be more engaging for the audience, especially if they have the possibility to experience as 360 degrees (preferably in virtual reality). Towards this end, we present an initial hardware setup.

Live-Streaming Test Case

We recruited a runner with a considerable following on a live streaming service, namely Periscope. He wore a go-pro strapped to his chest for analysis afterward, whilst streaming his mobile phone while running, holding the phone in his hand using a gimbal. The runner picked two popular running trails in Tokyo that take him around 45 minutes to complete for the live-stream.

We recorded the run from the go-pro and the periscope stream with audience comments and feedback.

Around 600 users joined each of the two live streams for the two runs and stayed until the end. We concluded that the initial test was successful as there was no drop of watchers during the two runs. However, we believe this is highly due to the runner engaging with the audience.

Periscope offers an easy way to show positive feedback by just touching the display while watching a live stream. The audience seemed more engaged every time the runner addressed them directly (turning the camera towards him), especially when he offered them options to pick, e.g. "Should I go left or right?", "Should I stay longer in the forest?". He would like to get some statistics about this feedback (how many users said "right" over "left" etc.).

In the interview, the runner was surprised that the first trials

were so successful. The performer did not expected people to watch until the end. He wants to continue runs exploring different areas of Japan and thinks it is an interesting new way to tell stories to his audience. However, he raised frustration over the streaming application, as it is not fit for running. Holding the smartphone in his hand the hold time is tiring. Additionally the viewing angle and direction of the camera are not optimal and sometimes difficult to adjust.

Run With Me: Hardware Setup

The other key question, we want to explore centers around 360-degree third person view and its relation to immersion, motivation, and memorability.

To this end, we have built our third person view for the 360degree stream. The first two prototypes can be seen in Figure 1. It consists of a backstrap and PVC pipes to be able to mount a 360-degree camera.

Between the prototypes, we iterated to improve camera angle and wearing comfort. The hardware design will be open-sourced.

For a 360-degree camera, we use the Theta S, as it can stream live video.

We had 3 runners with live-streaming experience try the current setup for short runs (between 10-45 min). A sample from the live stream can be seen in Figure 2.

The feedback was encouraging, as the setup seems to record decent video. On the downside, the performers mentioned that the device is still a bit cumbersome and clunky. It is acceptable for them regarding the storytelling live-streaming aspect, as the picture quality seems acceptable.

One runner mentioned it would be nice to see the current



Figure 2: Sample image from the 360-degree video stream.

image quality and maybe user feedback visualized on a smart watch or as audio cues. This is considered for future exploration.

Future Experiments

Encouraged by the initial feedback, we will further enhance our prototype. First, we aim to implement some interactions between runner and audience (better feedback, live voting). Next, we will work on our hardware setup, making the device lighter and less obtrusive to wear. Then, we will conduct further user tests.

We are also preparing a large-scale data recording to explore the motivational aspects. We started recruit around 30 users that want to change their lifestyle, become fitter and have the interest in running (even started it from time to time) but could not keep up with it.

We also recruited two regular runners (3-4 times a week 5-12 km) with experience in live-streaming (Snapchat, Periscope).

The users will use one of the four randomized ways to participate in the live-streams: fixed view first person, fixed view third person, 360-degree video (the view is alterable), 360-degree video in virtual reality (cardboard).

We are aiming at a time interval for 2-3 weeks for the interventions (2-3 runs per week) and will follow-up on the users after the intervention.

Conclusions

To our knowledge, we are the first to explore third person view recordings and streaming for storytelling while running.

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