SmileTracker: Automatically and Unobtrusively Recording Smiles and their Context

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Introduction

- Smiletracker uses a built-in webcam to make it easy to capture moments that elicit smiles while using a computer
- When you smile, Smiletracker recognizes it and saves both the image of your face and what you were looking at.
- You can easily review what made you smile and share it!
- Based on positive psychology research, we hypothesize that the act of reviewing smile-eliciting content will improve positive affect, and consequently, overall wellbeing.
- We conducted a preliminary user study to test this hypothesis, as well as to gather feedback on the initial design.

System Design

- Web app hosted at https://smiletracker.herokuapp.com/.
- Users log in to the site using their Facebook account, and are taken to a personal profile page *(Fig 1).*

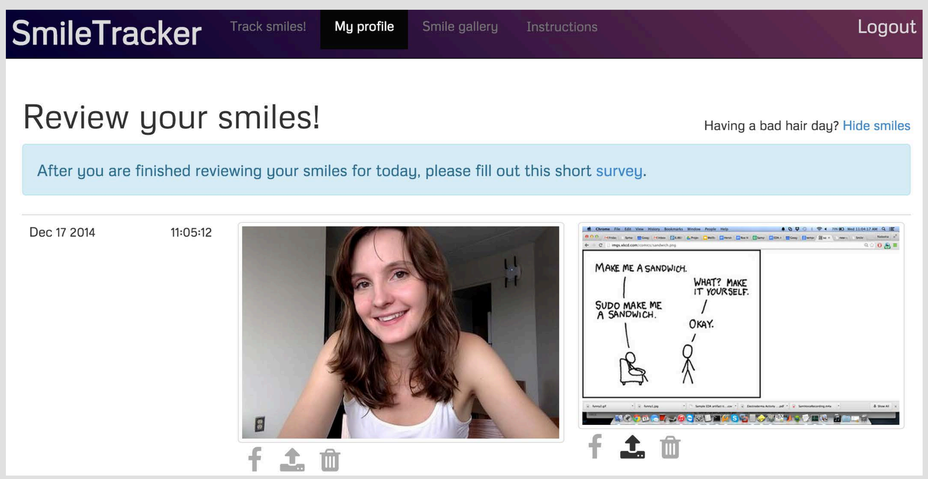

Figure 1

- For each photo, the user has the option to delete, share to Facebook, or publish to our public SmileTracker gallery *(Fig 2)*

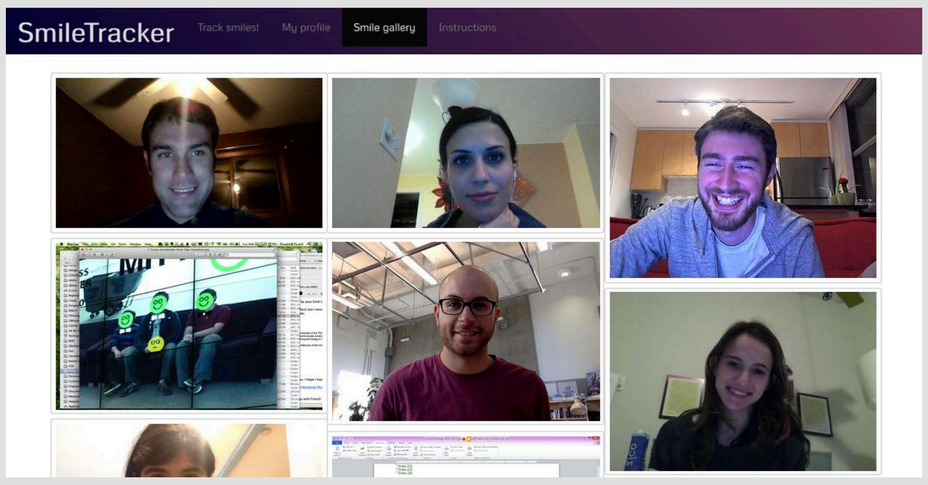

Figure 2

- To capture new photos, users can navigate to the *Track Smiles* page *(Fig 3)*.
- A face and smile detection algorithm based on OpenCV object detectors are applied to the raw webcam video.
- When a face is detected, the smile intensity of the face will be calculated and shown in real time.
- A smile intensity threshold is set adaptively or manually. Once a user's smile intensity crosses the threshold, a photo and a screenshot will be taken with a green smiling face displayed.

Figure 3

User Evaluation

- To test our hypothesis, we designed a short survey *(Fig 4)* to assess three aspects of the users' emotional state (valence, arousal, and stress) before and after they review their photos.

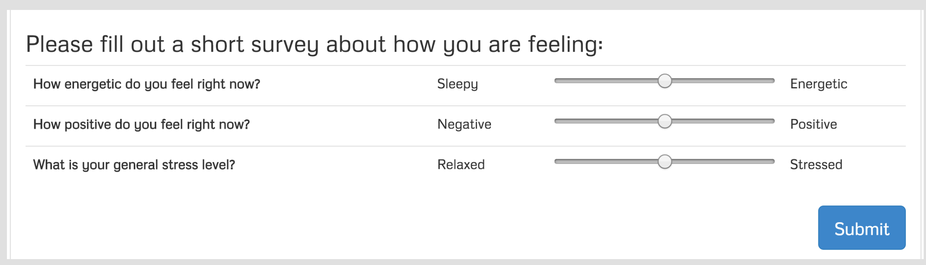

Figure 4

- 34 people registered for the site using their Facebook accounts.
- 22 gave informed consent to participate in the study.
- We received18 completed *before* and *after* surveys.
- The results are shown in Table 1.

Measure	Mean change	SD change	t	p
Arousal	5.33	21.17	1.07	p>0.05
Valence	8.28	18.11	1.94	p<0.05
Stress	-3.28	10.32	1.32	p>0.05

Table 1

Conclusions and Future Directions

- User study indicated that there is a demand for this application.
- Our initial study showed a significant increase in positive affect (valence, Table 1) after using the app.
- We intend to make a number of improvements based on the feedback we received, for example streamlining the set-up process and improving the robustness of the smile detection.

Acknowledgements

This research was supported by the Robert Wood Johnson Foundation Wellbeing Initiative at the MIT Media Lab.

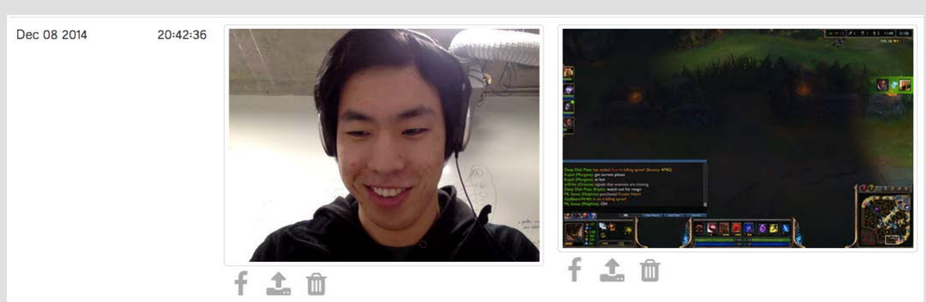

Figure 5 - A user's naturalistic smile was captured during a positive moment while playing League of Legends.