

Comparative Visualization of Personal Beer Taste

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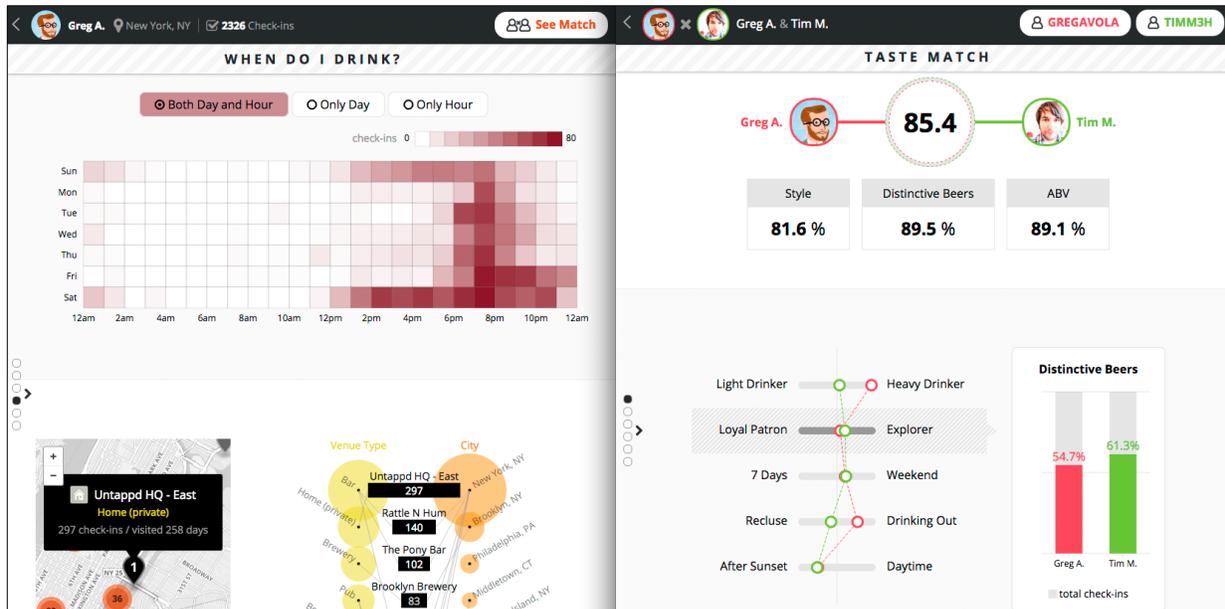


Figure 1. “Beer Match: <http://beer.tanykim>” analyzes, compares, and visualizes a single user’s (left) or two people’s (right) beer taste and drinking behavior.

ABSTRACT

Beer is good and fun to explore. With a self-logging smart phone application (app) “Untappd,” people can check-in when they drink beer with their own rating of the beer, retrieving the location information, and the metadata of the beer including style, alcohol percentage, and brewery. Harnessing these personal beer drinking data, we develop a web app called “Beer Match” that analyzes single users’ beer taste and drinking behavior and compares two users to generate new datasets. The app showcases two views, Single and Match, each of which has a series of visualizations. Beer Match enables users to learn more about their everyday life around an interesting but otherwise hidden subject and to examine the comparison between their and others’ behavior.

Keywords: personal informatics, comparative visualization

1 INTRODUCTION

People promptly document their activities and consequently produce personal data through “checking-in” services. Among these logging apps, Untappd (<http://untappd.com>) focuses on one specific cultural artifact, beer, allowing users to track beers they drink. Each check-in entry has time stamp and location information (latitude, longitude, address, and name and category in case of public place) powered by FourSquare. Untappd also has a social feature with which users can become friends with other people. In the original Untappd app, similar to other self-documenting apps, users browse their own and friends’ check-ins from newest to the oldest ones.

Our visualization system and web application “Beer Match” analyzes a user’s beer check-in data and represents her beer taste and drinking behaviors in various types of visualization, distinguishable from the parent app’s timeline-like list of check-in entries. More uniquely, Beer Match compares two users’ data and visualizes their taste match, behavior similarity, and side-by-side comparison of preferred beers and shared styles, drinking time, and location.

Beer Match is considered Casual InfoVis [4] as it presents personal and everyday data for non-experts. As it is a tool with which people can “reflect on their own personal data to gain a better standing of their own behavior [3],” it also lies in a current research theme across HCI and Information Visualization, Personal Informatics [5], or Quantified Self [2]. Our beer-loving users find our system very fun as it shows their undiscovered history and context of their drinking behavior, and how well they get along with their friends when beer is involved. Our system is developed with D3 [1] and optimized for desktop screens.

2 DATASETS AND VISUALIZATION DESIGN

First, an Untappd user enters his username into Beer Match to retrieve his own beer check-in data via Untappd APIs (<https://untappd.com/api/docs>). Once the user selects his primary time zone, we generate a new dataset for his visualizations. Next, the user has two options for views—Single or Match. For Match view he selects a friend or other Untapped user whose data are not private. Our system computes their taste similarities and analyzes other comparable aspects. Both Single and Match views have several sub topics and we describe some of their interesting parts in this section.

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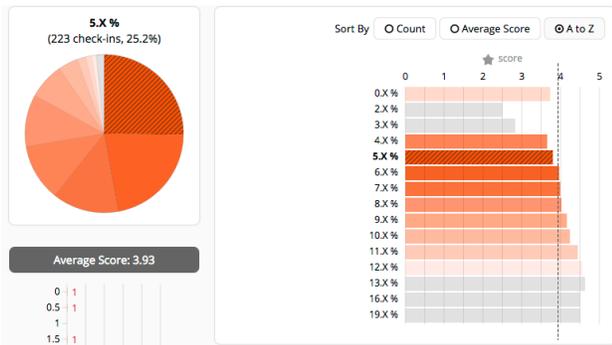


Figure 2. Average score of beers by alcohol content

In Single view, we present 1) the frequency of drinking, 2) preference of style, brewery, ABV, and country, 3) loved and hated beers, 4) drinking days and hours, 5) pubic locations, and 6) drinking time and location. To show a single user's beer preference in the four categories we use both pie and bar charts. The ten most frequent check-ins are highlighted in a gradated shade. When a user moves his mouse over a slice of the pie, the corresponding bar of the bar charts is also highlighted and vice versa. The bar charts are sortable by check-in count, average score, and name (A to Z) [Fig. 2]. In the matrix view, we show a user's drinking time with twenty-four hours on X axis and seven days on Y. The numbers of check-ins during a given hour of a day are presented in gradated shades similar to the heat map technique [Fig. 1-left]. These same size squares, each of which has corresponding opacity, transform into bar graphs when a user changes the view to either only day or only hour.

Match view presents 1) taste match percentage, 2) comparison of two users' drinking behavior, 3) beers both agree and disagree, 4) shared styles, 5) side-by-side view of their temporal drinking pattern, and 6) location information including places that both visited. We compute two users' drinking behavior in several categories. For example, the ratio of distinctive beers to the total check-ins is scaled from Loyal Patron to Explorer. With distinguished colors, the visualization contrasts the two users' position. On the right, we add bar graphs explaining how the comparative behavior is derived [Fig. 1-right]. Among the four beer preference categories, we focus on beer styles for Match view; we choose a chord diagram to compare the two users' favorite styles. Users can examine the differences in their check-in count; the arc length presents the check-ins count of a particular style. When an arc is selected, the corresponding arc of the other user is highlighted, with the text of the style name and check-in counts [Fig. 3].

3 DISCUSSION AND APPLICATIONS

Untappd is a self-tracking app designed for those who are interested in documenting their specific activity (i.e., beer drinking) possibly in a "fetishized" manner without specific purposes of behavior changes [5]. Beer Match analyses and visualizes these everyday personal data, focusing not only single users but also the match between two users. In doing so, it helps the data generators examine the details of their beer tastes, and to understand the history, context, and factors of their beer drinking behavior among what people question in exploring their personal data [3].

In our trials, one beer lover was already aware that his favorite style was Indian Pale Ale. However he did not know that he tended to give higher scores to the beers with higher ABV [Fig 2]. With the timeline visualization showing the cities where he had

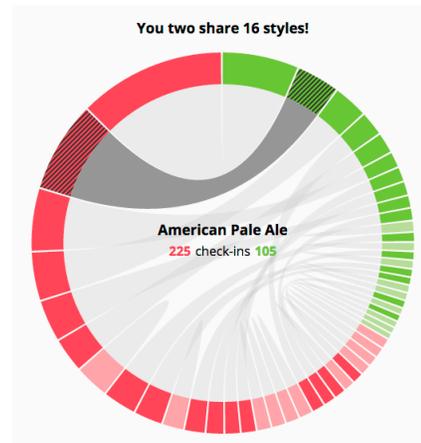


Figure 3. Shared most checked beer styles of two users

checked in, he was able to see the *history* of his travels. He sometimes related locations to several unusual high check-in counts, and he recalled that he had attended beer festivals or parties (*context*). With the location-focused visualization in Match view, another user with lower check-in frequency examined that she drank mostly socially when she had visited her beer-loving friend (*factors*). Since she was not a beer geek, she was able to learn more her beer taste simply by checking top-rated beer styles and AVB.

People continuously create data from their actions such as online shopping and streaming video contents. However, those potentially interesting data are rarely presented beyond a simple list of data points, for instance, order history on Amazon and the movies and TV shows they watched on Netflix. In contrast, our system analyzes personal data and present in various visual forms, so that it supports users' self-discovery about a fun activity that people are willing to track and to share with others.

Currently most personal informatics research and commercial products focus on supporting behavior change in the realm of fitness and health management. While we admit that such practical and goal-oriented systems of quantified self attract many people, we also argue that visualization systems like ours can bring their unique benefits. Although they are not created with specific life-improving goals, such artifacts as Casual InfoVis can help people know interesting parts of their life better. Exploring what, when, and where you drink, and comparing your data with friends is simply exciting. This is the main value of our visualization system.

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