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# Encounter Opportunity Browsing: A New Approach to Opportunistic Social Matching

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**Abstract**

Opportunistic social matching is the concept of introducing individuals for various social interests when user-contexts are conducive to impromptu face-to-face meetings. Early prototypes have received positive feedback, yet they are susceptible to inaccurately reported match preferences and false-negative match recognition. This paper presents an alternative design for opportunistic social matching called the *encounter opportunity browsing interface*. The interface lets users indiscriminately browse and react to opportunities for social encounters nearby, which enables the gradual learning of users' match preferences. A preliminary qualitative assessment of the interface indicates that users seek trusted signals regarding the enjoyability of social encounter opportunities displayed.

**Author Keywords**

Social matching; opportunistic; context-aware

**Introduction**

Mobile social matching systems for specific user goals like dating (e.g., *Tinder*) are commonly used today. Yet mobile applications that match geographically-proximate users for a variety of goals or interests (e.g., not "just" dating) are still in their conceptual stages.

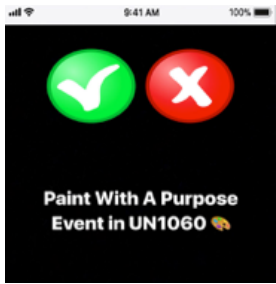
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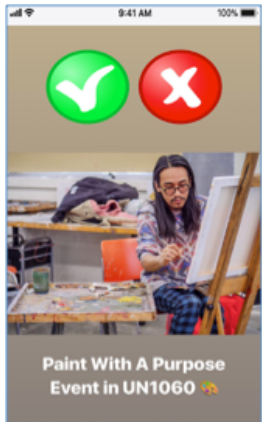
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**Figure 1:** The first interface includes only a text description of the encounter opportunity as posted by a hypothetical student.



**Figure 2:** The second interface includes a picture and text description of the encounter opportunity as posted by a hypothetical student.

One such concept is opportunistic social matching [4], which involves using contextual information to match users when the opportunity for a face-to-face encounter arises. This contextual information includes relational context (shared affinities like a hobby or country of origin), social context (external social settings that may influence one's desire/availability for a face-to-face encounter), and personal context (one's current mood for meeting a new person) [3,4].

Original designs for opportunistic social matching systems [2,3] follow a push notification approach in which users only become aware of encounter opportunities when an alert is sent to their mobile device (e.g., when two users with a shared interest in tennis cross paths on the street). There are some drawbacks to this approach. For one, users must provide some initial contextual preferences before encounter opportunities can be presented to them (e.g., sign-up surveys). These onboarding processes can be exhausting and, consequently, susceptible to inaccurately reported user-qualities and match preferences. A second drawback is the risk of false-negatives (encounter opportunities that a user would like, but that the system never shows a user because it thinks the user would find them undesirable).

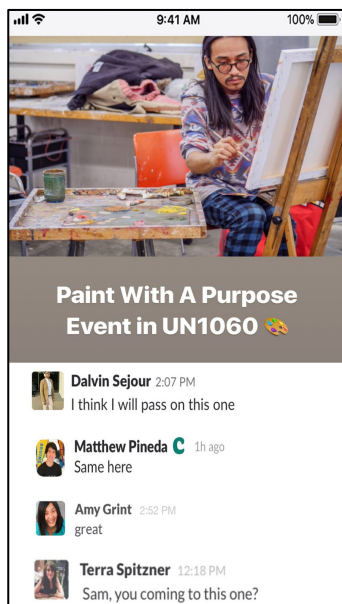
This paper presents an alternative design for opportunistic social matching that we call the *encounter opportunity browsing interface*, along with preliminary findings from a qualitative evaluation. The interface lets users indiscriminately browse encounter opportunities broadcasted by others when their social and personal contexts are conducive to such opportunities (i.e., when they are in the mood and in a place for social interaction). The interface addresses weaknesses of the

push notification approach by enabling users' contextual preferences (what they want to be matched on, when, and where) to be gradually learned based on reactions to browsed encounter opportunities without any previous onboarding. The research question that is currently guiding our exploration of the interface is: *what information do users want about social encounter opportunities, and how do they want it displayed, to inform their decisions to attend/participate?*

### **Design and Evaluation of the Encounter Opportunity Browsing Interface**

We designed a mobile app interface that shows users nearby encounter opportunities ("the feed") along with a like/dislike mechanism to record their reaction to each opportunity. Encounter opportunities in the feed are posted by other users as a way to "broadcast" face-to-face social activities that they are currently engaged in or want to do with others who are geographically nearby. Variations of the interface were designed for a qualitative evaluation with university students, and all variations displayed one encounter opportunity post by a hypothetical student: a "Paint with a Purpose" activity currently happening on campus in which individuals gather to socialize and make paintings (this activity was chosen based on feedback from a class of undergraduate students). Variations of the interface differed in regards to the information available about the encounter opportunity. These included: 1) only a text description of the activity and location (figure 1), 2) a photo and text description of the activity (figure 2), and 3) a photo, text description, and comments about the activity from other users (figure 3).

The interface variations were assessed by 11 students (5 female, 6 male) of an urban USA university.



**Figure 3:** The third interface variation includes a picture and text description of the encounter opportunity as well as comments added by other hypothetical users. The comments read (in order):

User 1: "I think I will pass on this one."

User 2: "Same here."

User 3: "great"

User 4: "Sam, you coming to this one?" [Sam was a randomly chosen name; not that of any participant]

Recruitment involved approaching students relaxing in public areas of the university (e.g., student lounge) and asking them to provide reactions to an interface that "makes students aware of activities that are happening on campus." This recruitment method was chosen because the students' presence in these public areas implied that their personal and social contexts were conducive to impromptu social encounters. Participants were shown the interface variations one-by-one and interviewed about their reactions. Participants were asked 1) how the content in each interface variation would influence their decision to attend and 2) what additional information they would want about the encounter opportunity. All interface assessments were voice recorded. Transcripts of the assessments were analyzed using open coding [5] to derive this paper's findings.

### Findings

Most participants were familiar with the concept of a "Paint With A Purpose" activity as depicted in the interface variations, and there was no indication that participants would outright reject the displayed encounter opportunity based on the activity type alone. Participants did indicate particular types of information beyond the activity type that would inform their desire to attend.

#### *Pictures that depict the current state of the activity*

The first interface variation provided only a text description of the encounter opportunity. While all participants understood from the text description what and where the activity was, most requested additional information to inform their desire to attend. These requests pertained to the "current state" of the encounter opportunity, which mainly involved

subjective insight such as how much fun the attendees were having, as well as basic logistic details such as a current count/list of attendees and an ending time for the activity (see quote from Tony on the next page). Several participants found the picture of the encounter opportunity (visible in the second and third iterations of the interface) to provide enough information about the activity's current state for them to make a final decision about attending. The picture was valuable to participants—relative to pure text—because it gave an indication of how attendees were enjoying the respective activity, it confirmed that other people were in attendance, and it confirmed that attendees were actually engaging in the specified activity.

#### *Opinions and attendance of friends*

The third iteration of the interface included text comments from other users regarding the displayed encounter opportunity. Most participants dismissed these comments because they did not personally know the users posting and could not confirm if such users actually attended. Several participants did however, report an interest in knowing the opinions of their friends about the encounter opportunity, and if any of their friends were attending or would be willing to attend with them (see quotes from Ben and Chris on the next page). They explained that attendance or interest in the activity by their friends would serve as confirmation that the respective activity was indeed enjoyable and worth the time to attend.

#### *"Appealing" information that compels attendance*

Several participants made the suggestion that encounter opportunity posts in the interface should be designed to look "more and more appealing" (Juan) to users, referring primarily to the picture of the "Paint

**Tony (after seeing the interface with a picture):**

*"[This encounter opportunity] just looks like a whole bunch of fun that you'll be having with other people because it seems inclusive with everyone else instead of being standalone by yourself."*

**Chris (on user comments):**

*"If my immediate friend group is saying they want to go, then that wouldn't matter what [comments from strangers] say. That would just knock off those negative comments."*

**Ben (on user comments):**

*"So like if it's a stranger or whatever, it's okay, yes. But if it's friend of mine, like I would want to know why he or she isn't attending."*

**Jessie:** *"So its all about having a picture and making it look more appealing to people. Now I would be more interested in it. Because it's brighter and more colorful and a guy painting."*

With A Purpose" event, but also the location of the event (e.g., events that are off campus, but nearby, may seem more appealing). They asserted that the interface should be designed to advertise encounter opportunities in a way that entices users to pursue them, as opposed to merely broadcasting and informing users of available opportunities (see quote from Jessie in the sidebar). This stance reflected their competing desires to sit alone and do homework/browse the Internet during their downtime on campus—alternatives that may not be as fun as encounter opportunities discovered in the interface, but that had predictable returns on their time.

### Discussion and Future Work

The goal of the encounter opportunity browsing interface is to let users indiscriminately browse and react to social encounter opportunities in order to gradually learn their opportunistic match preferences. Key to this goal is presenting users with the right content about encounter opportunities to inform their decision to pursue a given opportunity. Preliminary findings indicate that users desire reliable signals of activity enjoyment in order to justify diverting time from their regular schedules to pursue an opportunity. Richer information, such as pictures from others attending the activity, and comments from trusted sources (e.g., friends) appear to be promising avenues for providing such signals. These early insights also suggest that signaling theory [1] and warranting theory [6] can be valuable lenses for future research of the interface and opportunistic social matching more generally.

Ongoing research of the encounter opportunity browsing interface builds on this paper's findings by studying more closely how picture content influences user reactions (e.g., gender and number of attendees visible), and how to display encounter opportunities for activities not yet occurring.

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