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# CHI PLAYGUE: A Mobile Conference Networking Game

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*ISS '16*, November 06-09, 2016, Niagara Falls, ON, Canada

ACM 978-1-4503-4248-3/16/11.

<http://dx.doi.org/10.1145/2992154.2996870>

**Abstract**

Modern professional networking relies on social media. To take advantage of this fact, we present CHI PLAYGUE, a conference game designed to facilitate interaction among strangers and encourage social networking to create a community. The game integrates digital technology (mobile devices and large displays) within the space of the conference venue, combined with a mixed-reality narrative and people's social interactions to facilitate the emergence of social dynamics. By providing a platform for large-scale, playful interaction, the game creates an experience that fosters the development of mutually beneficial, personal, and professional relationships among players.

**Author Keywords**

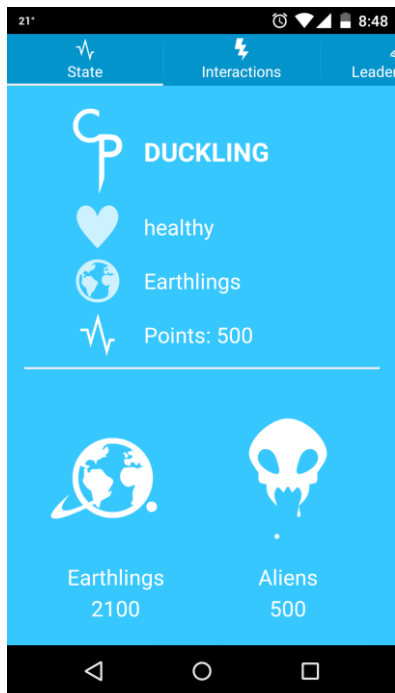
Social networking game; mobile game; mixed-reality game; social game; gamification.

**ACM Classification Keywords**

H.5.1 Information interfaces and presentation (e.g., HCI): Multimedia information systems; K.8.0 Personal Computing: Games.

**Introduction**

The increasing ubiquity of mobile and online technologies allows game designers to seamlessly integrate real-life social interactions in digital games. Traditional



**Figure 1.** The status screen, where players can see their points, team, infection status, and the total score for both teams. The blue background colour is displayed to players with a healthy status.

The game application and video are available at:  
<http://play.hcigames.com/playgoue>

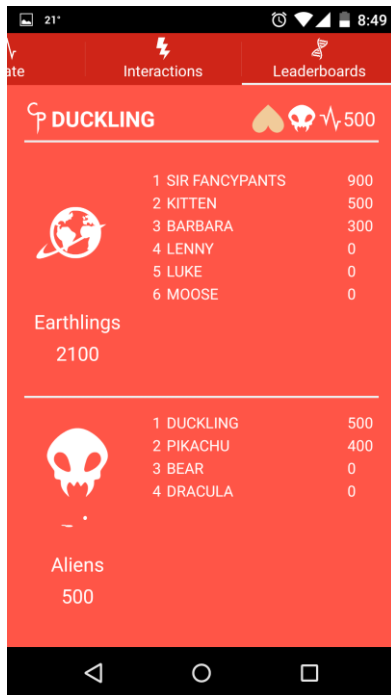
methods of networking, such as the exchange of business cards or social media accounts, are still necessary but have become somewhat tedious. CHI PLAYGUE [4] is a mobile digital game designed to facilitate networking among conference attendees, encouraging them to build personal and professional connections with members of the community. It is designed to augment the conference space with an alternate reality, creating a narrative scenario of a virtual alien invasion that can be influenced by the players' actions. Players can decide to aid the alien invaders or defend against them by interacting and networking with other conference attendees. This way, CHI PLAYGUE gamifies conference networking by exploring social interactions on a shared physical space.

Similar applications or games have been previously presented aiming to increase social interaction and networking. *Flashbulb* [1] casts players into the role of *paparazzi*, requiring them to photograph specific attendees as a conversational icebreaker. However, this concept only encourages players to interact with particular targets. In CHI PLAYGUE, interaction with any other attendee yields in-game progress, providing an incentive to form as many connections as possible. *Snag'em* [3] provided similar motivation, offering points to players for growing their social network. CHI PLAYGUE enhances this motivation by embedding in-game rewards in an exciting narrative context. Cooperative team mechanics further enhance sociality, maximizing the design's social impact. *Whova* [5] is a mobile application for event networking that includes fea-

tures such as business card exchange, chat, and agenda. However, it does not feature a gamified layer to motivate attendee engagement as CHI PLAYGUE does. Ku and Spruyt [2] have designed a game to help break the ice for starting conversations between conference attendees. However, their game did not support people to truly get to know each other.

### Gameplay

CHI PLAYGUE facilitates social interaction for participants. The game's narrative emphasizes that players must form social connections to create a structured data cloud protecting the planet from alien invaders. Aliens were chosen as an universally accessible narrative context, giving players of diverse cultural backgrounds a recognizable antagonist to unite their efforts. The invaders are also carriers of a highly contagious biological agent, which has invisibly contaminated a small, random subsample of the player population. This creates a dynamic similar to the virus transmission themes of the wildly popular *zombie* genre. As gameplay develops, sick players are able to infect healthy players, flipping their allegiance to the invading alien forces. Defected players can also be cured, rejoining the Earth defences. As the game progresses, the two teams (*Earthlings* and *Aliens*) struggle to keep hold of their ranks, forming social connections to increase their score. The ultimate goal is to secure the victory of a player's chosen faction. At the end of the conference event, the team with the strongest network (highest cumulative score) wins, determining the fate of the planet within the narrative context of the game.



**Figure 2.** The leaderboards screen, where players can view the best scores of players from each team. The red background colour is displayed for turned players.

CHI PLAYGUE gameplay has the potential to evolve rapidly. The population begins as healthy members of the Earth faction; however, a small portion of players are randomly selected to be infected. The outbreak is handled by the server backend. The initial infection is invisible, so these players have a chance to unknowingly spread the infection. After six hours, silently infected players progress to a visibly sick state. Those that have interacted with these players, then find themselves in an uncertain situation. As interactions continue to occur, the infection and the cure both possess the potential to spread rapidly through the population. Players can adopt different social strategies lead their team to victory, as described by Tondello et al. [4].

*New to this version:* While players strive for their team's supremacy, CHI PLAYGUE encourages them to talk with other players (with whom they interact) to learn about them and their research. At random intervals, the game asks the player a random question about one of the other players they have scanned before. If they answer the question correctly in the allowed time, both players earn points. If they did not gather the required information when the players first talked, they have the chance to seek the other person out to ask for the missing. However, since time has passed, players earn less points when this happens. Players are able to see the business card information of other players they have scanned. They are also able to automatically follow other players' Twitter account or connect with them on LinkedIn. Additionally, players can leave short testimonials or comments about other people they have scanned. The testimonials can be read by people who received it in the game's interface.

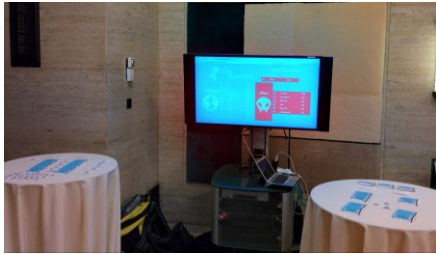
## Surfaces and Spaces

Players are invited to download CHI PLAYGUE on their *iOS* or *Android* devices. They receive a business card with a unique QR code serving as in-game identification. Player motivation comes from the promise of a shared social experience occurring inside the conference venue and the competitive drive to see themselves, or their team, rise to the top of the leaderboards and emerge victorious in the game's narrative. During registration for the game, CHI PLAYGUE asks players to enter their business card, LinkedIn, and Twitter information, and some questions about their research or facts about them. This enables a deeper networking experience between players. The game's user interface consists of the *status screen* (see Figure 1), the *history screen*, and *leaderboards* (see Figure 2). The gameplay mechanics consist of interactions between players. During interactions, a player scans the identification of another (see Figure 3), earning points for both players and potentially changing their health status based on each player's current condition. The rate at which the alien infection is spread or cured depends on each players' current infection status. A more thorough description was presented by Tondello et al. [4]. At any one time, the cumulative score of a team is determined by the scores of its current members.

A large monitor display needs to be set up at a prominent location of the conference venue to show the teams' scores. The display highlights the new social connections that were made or strengthened by players by randomly showing some of the testimonials people left in the game (see Figure 4).



**Figure 3.** A player scans the QR code of other player to earn points for their teams.



**Figure 4.** A large monitor display is used to show players the overall progress of the *Earthlings* and *Aliens* factions, the conference attendees business cards (to encourage other players to seek them out and talk to them) and the testimonials players have entered after interacting with other players.

## Innovations

Since portability and accessibility were essential qualities in a game targeting a large active population, the mobile platform was a natural choice. CHI PLAYGUE is run through server-side operations and a mobile app. The mobile application, which runs on most *iOS* or *Android* devices, is a lightweight layer that retrieves information from the web server and presents it within the app's user interface. It handles the scanning of other players' QR codes and the server processes them.

The simplicity of the interaction mechanic is designed to provide opportunities for conference attendees to meet, converse, create new contacts, and have positive, playful, and social experiences. Thus, technological devices help to foster real-world interactions between the conference attendees. Players are provided with an open invitation to initiate conversations with others. Leaderboards encourage engagement and progression, conferring special gameplay advantages to socially prolific players. The exchange of business cards and the questions about people's research encourage the development of meaningful social connections, which may result in real-world collaboration.

CHI PLAYGUE uses the space of a conference venue, augmented with the attendees' own mobile devices and a mixed-reality virtual narrative, to motivate attendees into social networking. The use of a public large display can further redirect the attendees' attention to the game and provide an extra fun and motivation layer. In the future, we plan to collect data to evaluate how effective CHI PLAYGUE is at engaging conference attendees in new social interactions.

## Conclusion

The main goal of CHI PLAYGUE is to liven up the casual social interaction essential to conferences. The innovative gameplay provides playful ways to meet and interact with people. As a result, conference attendees have additional opportunities to become familiar with one another's works and to form new social and professional connections. CHI PLAY integrates digital technology through mobile devices and large displays, the shared space of the conference venue, and social interactions to foster social networking.

## Acknowledgements

Gustavo Tondello thanks the CNPq, Brazil, and the University of Waterloo for his funding. Rina Wehbe thanks the Cheriton School of Computer Science, University of Waterloo, and NSERC for her funding. Dr. Nacke's research is supported by his NSERC Discovery Grant (RGPIN-418622-2012), NSERC CREATE: SWaGUR, Mitacs Accelerate, and SSHRC IMMERS (895-2011-1014, IMMERS).

## References

- [1] Entrepreneurial Game Studio. *Flashbulb*. <http://egs.excite.drexel.edu/flashbulb/>.
- [2] Ku, D. & Spruyt, J. *Designing of ICE: Interactive Co-located Events*. Independent thesis Advanced level. Umeå University (2016).
- [3] Powell, E., Stukes, F., Barnes, T., and Lipford, H.R. Snag'em: Creating Community Connections through Games. In *IEEE PASSAT and SocialCom 2011*, IEEE (2011) 591-594. doi:10.1109/PASSAT/SocialCom.2011.229.
- [4] Tondello, G.F., Wehbe, R.R., Stahlke, S.N., Leo, A., Koroluk, R., Nacke L.E. CHI PLAYGUE: A Networking Game of Emergent Sociality. In *Proc. of CHI PLAY 2015*, ACM (2015) 791-794. doi:10.1145/2793107.2810265.
- [5] Whova. *Whova*. <https://whova.com/>