Designing a User-centric Verifiable Lottery Interface: A Case Study on Course Selection

Li-Fei Kung*, Hsun Lee*, Ching-Shiuan Chen*, Wen-Ning Chen* and Wei Jeng*+,
*National Taiwan University, Taiwan
+National Institute of Cyber Security, Taiwan

Abstract

This study explores the design of a user-friendly interface for HeadStart and perceptions towards a verifiable lottery system. Six participants were interviewed to understand their motivations to verify the lottery process and their perception of the current lottery client.
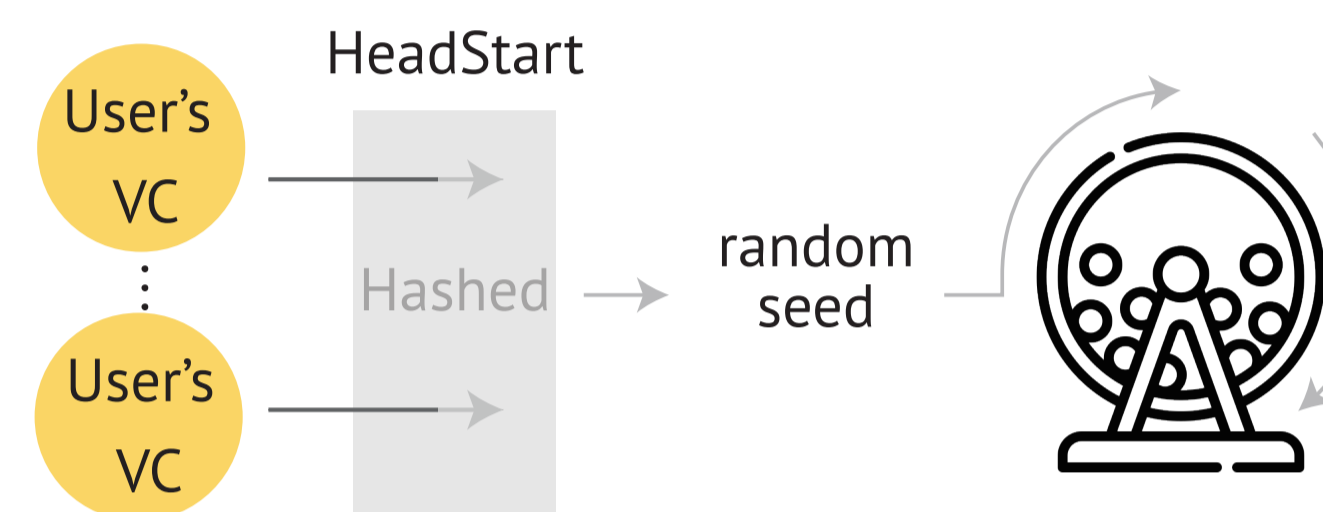
Research Questions

RQ1: How does the interface design of client-based randomness generator influence the motivation of users to use the verification function in a lottery-based enrollment system?

RQ2: What are user's perceptions of a verifiable lottery system in the above context?

What is HeadStart?

A verifiable cryptographic randomness generation protocol, proposed by Lee et al. in 2022, is particularly commendable for its real-world practicality and participatory.

The simplified lottery progress of HeadStart
*VC: A self-set verification code from users.

More details about HeadStart:

Case Study - Course Selection Lottery

A course selection at a research university in Taiwan in September 2022.

The highly sought-after course attracted a significant number of students.

Method

Six in-person, semi-structured interviews lasting approximately 30 minutes.

Participants were asked to share their experience of verification process, as well as their thoughts and feelings about the verifiable lottery system HeadStart.
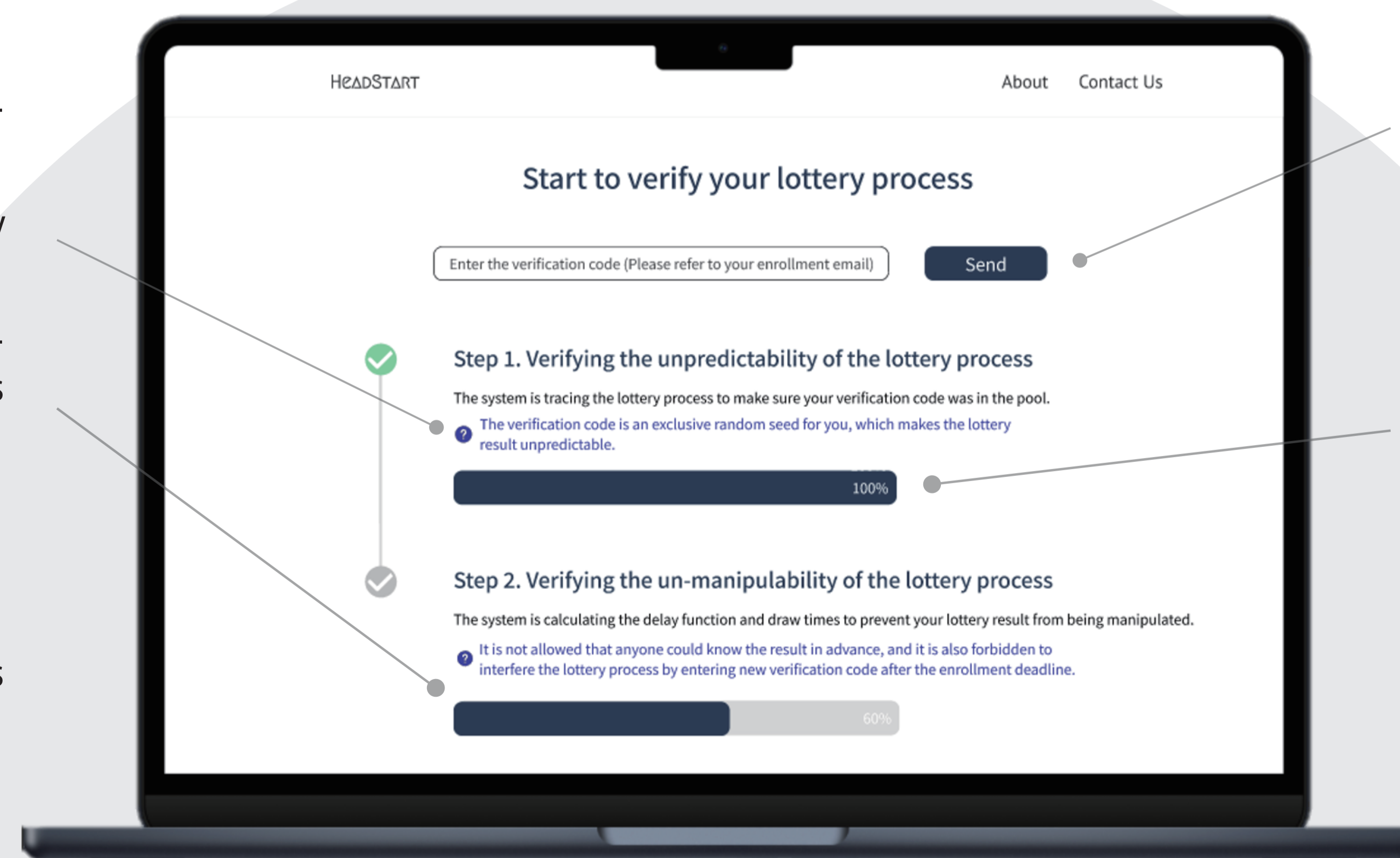
Preliminary Result

Interface Design Highlights

1. **Message design**: describes the utility of algorithms using easily understandable words.
2. **Blue question mark icon**: provides explanatory annotations for technical jargon.
3. **Progress bar**: strengthens users' sense of protection and encourages trust in the system's verification of the lottery.

User's motivations to verify

Curiosity (P01, P02)
Misunderstanding the verification was needed to get the final result. (P03, P05).

User already wins the prize. (P06)
Not very interested in the class. (P04)

User's perception toward interface

Misunderstanging of Verification Code ⚠

1. As the identification: like a password for the system to confirm authority (P01).
2. As the "lots" in the lottery (P04, P05)
3. As the odds of winning (P03, P04)

Trust Effect from Progress bar

1. Fluent presentation of progress bar made user **doubt** if the system was really conducting the verification process (P01, P04).
2. Believe the system was verifying the result and made users **trust** the system (P02, P05).

Overall experience

Consider HeadStart as an unique, engaging, fast, convenient, and professional lottery tool.

國立臺灣大學 National Taiwan University