

# Alternate Reality Game for University-Level Computer Science Education

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Work-in-progress

## Alternate Reality Games (ARG)

- Interactive narrative using different media
- The real world as the gaming platform
- Playing involves collaborative mystery solving

- Mysteries consist of several puzzles
- Highly engaging for active participants
- Terminology:

*Rabbit hole/Trailhead:* Participants' first encounter with the game  
*Puppet masters:* People involved designing and running the game

## Case: Computer Science ARG

- Primary target group for the game: university-level computer science (CS) students
- Off-curriculum: no rewards in terms of study credits
- Several trailheads to promote the game
- Takes place in the real world as well as online
- Duration: several weeks during semester 2012-2013

## Research

### Aims

- How to motivate students to participate?
- What did the participants learn?
- Suitability for CS education and recruiting
- Did the game encourage student networking?

## Game Content

- One collaborative quest
  - "Find the hidden treasure"
  - Requires solving several smaller puzzles
- Puzzles require CS skills, e.g.
  - Programming
  - Algorithm design & implementation
  - Data structures
  - Data mining
  - Cryptography
- Solving all the puzzles individually is impossible

## Game Goals

- Practice and learn
  - Computer science skills
  - General problem solving
- CS degree programme recruitment and promotion
- Collaborate and network with peers

## Methods

- Interviews
- Questionnaire
- Document studies
- Automated logging

## Example Puzzle



Initial clue for the puzzle

- Pixels of the initial image must be sorted based on the red component of the RGB value
- Only stable sorting algorithms produce the desired result



Puzzle solution



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