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

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

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?

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

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