

SBSE as Gaming

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How many gamers in the
audience?

Average Gamer ('11 study)*

- 37 years old, has been playing for 12 years :)
- Adult woman 37% > boys of 17 or younger
13% of entire game playing population
- 55% play on portable devices

*<http://www.theesa.com/facts/gameplayer.asp>

What is meta-heuristic?

- A systematic framework that facilitates trial and error
 - trial: neighbourhood, crossover & mutation, etc
 - error: fitness comparison

What is video gaming?

- An entertainment product & service where the (enjoyment) value can be influenced by users through direct feedback (Wikipedia)
- How do you learn to play video games?
 - Read the manual (if there is any)
 - Trial and error

Can we dress up SE
problems as games by
means of SBSE?

Gamification

- Use of game play thinking and mechanics to solve problems and engage audiences (Wikipedia)
- Some claim that this is strong enough motivator that can be used for social movements
- But I am not talking about badges...

Solving game = solving real problems?

- Play racing game to solve instances of TSP?
- Play Tetris-like puzzle to solve instances of test suite optimisation?
- Can we define sets of mappings from real world problems to playable video game format?

Interactive GA

Computer

Human



Optimisation Game

Computer

Human



No set method

Mimicry: you
pretend to be
something

Agon: logical
problem
solving



Alea: random
gambling

Illinx: you
experience
something firsthand

Challenges

- Game usually requires a well defined, achievable goal: solutions to real world problems are not known in advance
- Enjoyment is a hard thing to measure

Why involve human?

- We already *try* to do so anyway
(Interactive GA, incorporating domain knowledge, etc)
- We may learn interesting details about human-based problem solving skills
- Voluntary, cheap computing resource

Proof of Concept(?)

- TwistYourIguana: a Wii-mote input controller for Iguana test input generator
 - Converts input generation of an integer pair into a spatial puzzle
 - The objective is to get rid of the red bar from the screen

