

Computational Game Creativity

Julian Togelius

Graphics



Sound



Narrative and dialogue



Levels and maps



Rules and mechanics



Games are multifaceted

- All facets need to work *together*
- Storytelling in games is *not* like movies
 - same goes for music, graphics etc...
- The ludic facet provides new challenges and opportunities

(Computational) creativity is a commercial necessity

- Content creation the biggest bottleneck in game design
- Infinite and adaptive games are impossible without online generation

Procedural content generation in games

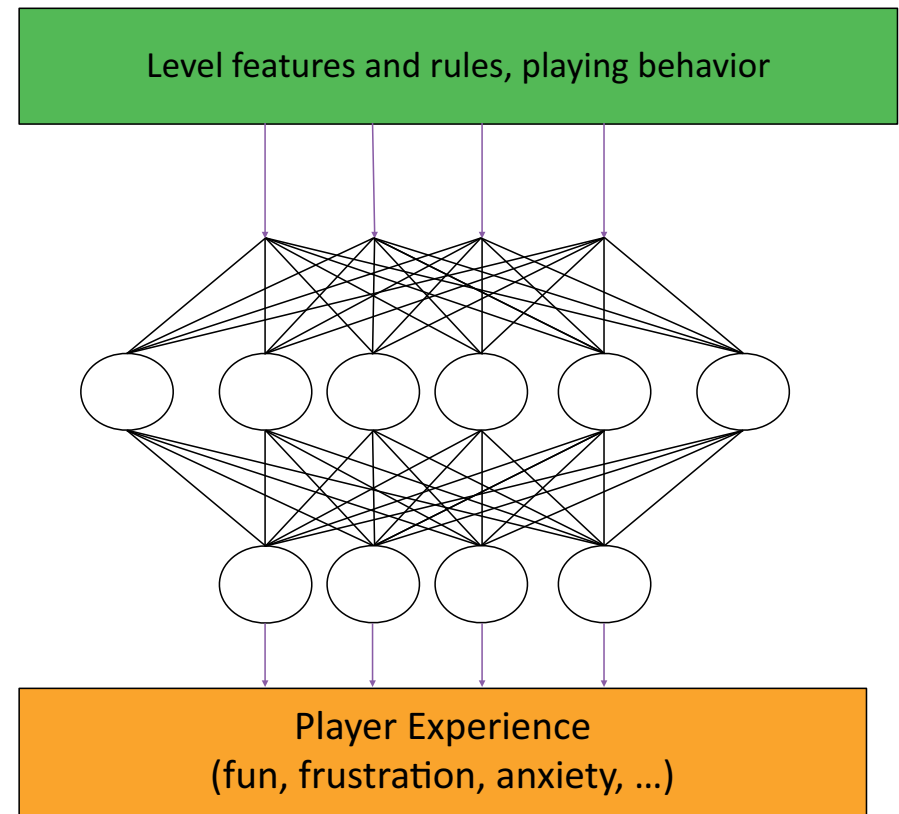
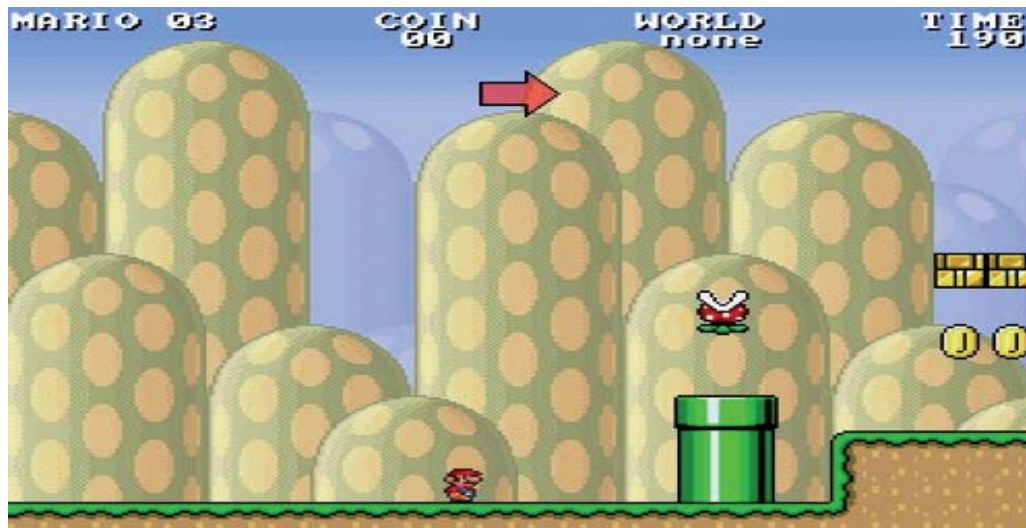


Beyond mere generation

- Evolutionary (and other) algorithms can be used to generate data
- Players don't accept bullshit
- Filter: fitness functions and constraints
- Based on theoretical models: game design theory
- Based on empirical models: computational models of player experience

Personalising Super Mario Bros levels

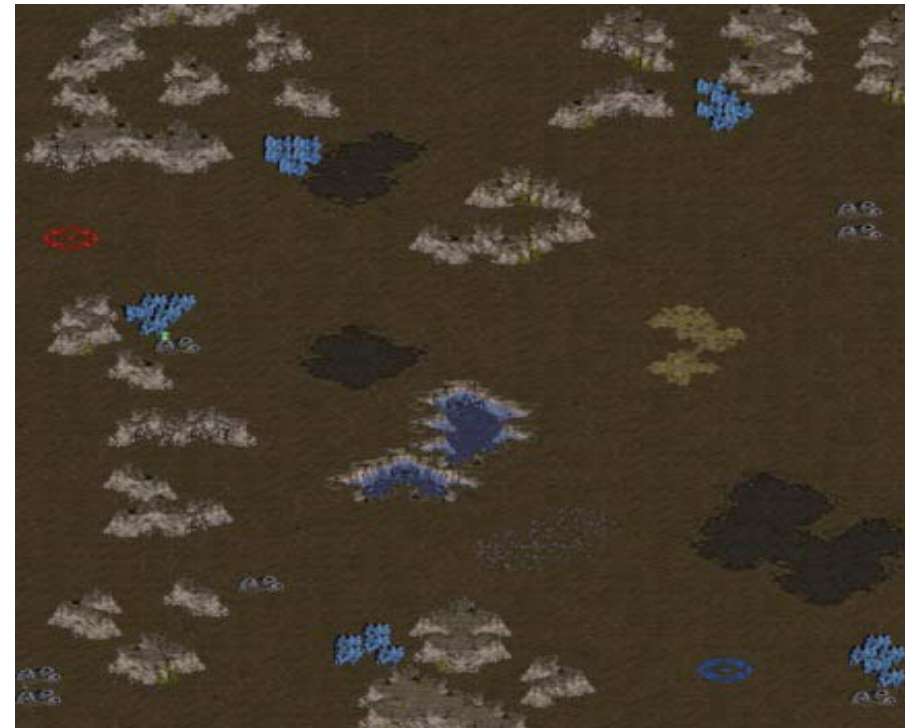
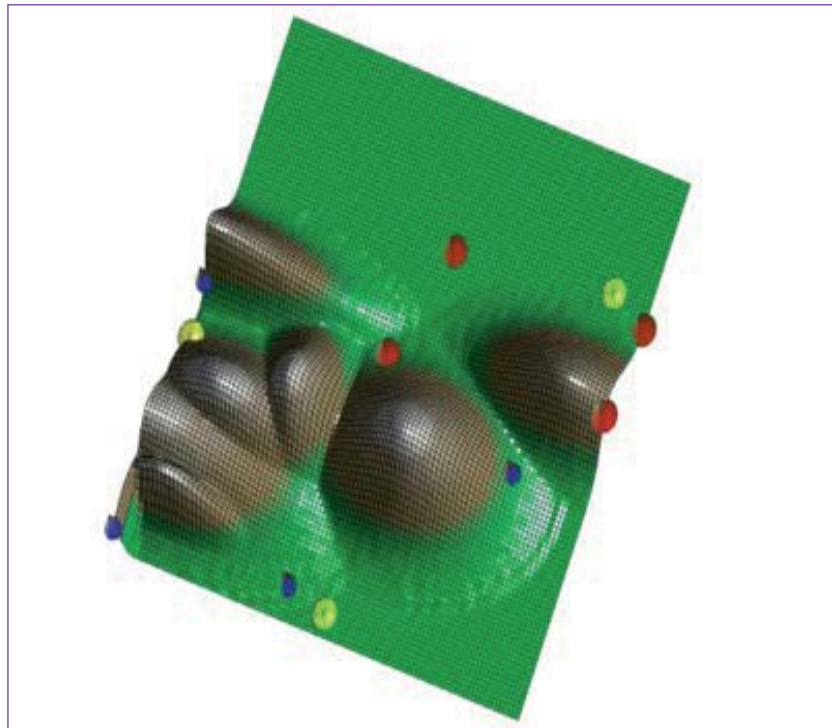
Search for level parameters that optimise player satisfaction, given a model of the player



Noor Shaker, Julian Togelius and
Georgios N. Yannakakis, Towards
Automatic Personalized Content
Generation in Platform Games

AIIDE 2010

Procedural map generation for RTS games



J. Togelius, M. Press, N. Beume, S. Wessing, J. Hagelbäck, and G. N. Yannakakis.,
Multiobjective Exploration of the StarCraft Map Space, IEEE CIG 2010

Video Game Mechanics Generation



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pcgbook.com