

# INTERVIEW

Joe Martin

## Computer-generated games

Joe Martin talks to Michael Cook from Imperial College's Computational Creativity Group, whose ANGELINA AI system can design games on its own



**CPC:** So, how does the ANGELINA AI work? How intelligent is it?

**Michael:** In terms of

intelligence, the core of ANGELINA is an optimisation search. It creates parts of games, tests them, then throws away the bad ones and recombines the good ones to make more parts. The way it evaluates these parts is fixed right now; we've given it these notions of a 'good level' or a 'bad level'. We make them as general as possible, but ultimately, we decide what it looks for. We'll be improving this in the future though.

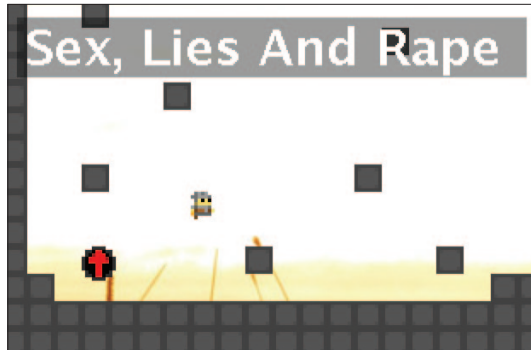
Beyond that, ANGELINA uses some clever techniques such as sentiment analysis. It scans Twitter and Facebook to try to understand the public opinion of a given person. This can be used in a lot of ways, but right now we use it in a fairly basic capacity. Do we like the person? Let's show them as being happy.

**CPC:** Do you plan to explore this more in the future?

**Michael:** We're looking at building more complex processes. That sort of data can be used in all sorts of different ways. There are other researchers in our group looking at things like idea generation, for example. How do we come up with new ideas based on existing ones? How do we go from 'people



ANGELINA can make game names based on simple puns



The AI can offer limited explanations about its designs

don't like Kate Middleton' to 'would people like Kate Middleton if she was a LOLCAT?'

**CPC:** How does ANGELINA affect games as art – can computers make art on their own?

**Michael:** We firmly believe they can. It's a

technical problem, a philosophical problem and a social issue too – suggesting that software can make fine art can be incredibly controversial. Luckily, gamers are more accepting of new ideas than the art world. I wouldn't describe ANGELINA's work as art just yet though.

One other problem is that we have to get past the stage where ANGELINA is seen as culturally significant just because it's an AI producing games. To achieve that, we need the software to talk more about the decisions it makes – why it places something here or why it makes the player do this.

**CPC:** Do you think an AI system can really accept responsibility of authorship? The games it makes now weren't made by a process capable of accepting responsibility and exerting creative judgement.

**Michael:** I was talking with my supervisor about this earlier this year. I asked him what we'd do if ANGELINA libelled someone, and it was an awkward thought. The larger problem is, as you say, the notion of accepting responsibility for work. This is all wrapped up in what we call 'framing information' – aspects such as commentaries that describe the design process. What's interesting is that there are

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