The Painting Fool in New Dimensions

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The Painting Fool is software which we hope will one day be taken seriously as a creative artist in its own right. We have recently implemented many improvements that enable the software to produce more interesting pictures, characterised along the following axes:

• *Artistic*: The Painting Fool is able to produce more messy pictures via a process which turns a set of colour regions into a single line. The heuristic nature of this process introduces unpredictable corrections often resulting in large paint strokes that add visually to the pieces produced.

• *Time and Movement*: The software can now output animations, whereby paint/pencil strokes dance around the screen, occasionally coming together to produce coherent pictures.

• *Spatial*: The Painting Fool can generate 3D virtual galleries and produce Google-maps style online browsing mechanisms. This framework will provide an arena for the software to undertake more provocative framing exercises, e.g., by writing wall text, curating its own pictures, etc. We will use the same technology to produce 3D sculptures using evolutionary approaches, and to construct and paint scenes by placing 3D models in a virtual world.

• *Size*: The software can now produce very large images containing literally billions of pixels. This has enabled pixelation-free printing up to A0 sizes and beyond. Such images take a long time to produce, so we have also implemented abilities for the software to perform preliminary sketches for approval beforehand.

• *Interaction*: The software can use various third party programs (such as context-free design grammars and evolutionary art software) in order to generate paintings from a perceived imagination. The Painting Fool also has access to all of the web-sourcing and graphics techniques available in the Computational Creativity Collective (see ccg.doc.ic.ac.uk/collective/).

• *Efficiency*: The software can now simulate so-called hand-over-hand painting, whereby multi-core processors are used, with each thread controlling a different paint brush. In addition to greatly increasing efficiency, this also produces more painterly effects, as the paints from the multiple brushes mix in unpredictable ways.

• *Intellectual*: The Painting Fool has increased abilities to create meaningful collages which illustrate news stories.

The more sophisticated painting behaviours in The Painting Fool have enabled us to produce large pieces for an exhibition entitled "No Photos Were Harmed/Growing Paths from Seeds", held in Paris in March 2011. This represented an artistic dialogue between Simon Colton and architect Eileen Chen, where we explored the nature of handing over creative responsibility. With her piece "LeGrandParis.com" Eileen took her lead from the skyline of Paris (thus handing over some creative responsibility to generations of architects), and in her piece "Generation of 13 Nudes", she handed over some creative responsibility to the medium (watercolours) by taking advantage of the often unpredictable nature of the flow of water. With both pieces by The Painting Fool (portrayed in figure 1), an amount of creative responsibility was handed over to the software. The vernissage for the event was attended by around 100 people, and the notion of autonomously creative software was much discussed.
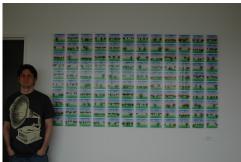

Figure 1: The *Dancing Salesman Problem* (3.5m × 1m, simulated acrylic paints on photo paper) and the *Four Seasons* (2m × 1m, simulated pastels and pencils on photo paper) pieces in the Paris exhibition.