UNIVERSITY OF CAPE TOWN
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Dissertation title	Procedurally generated realistic virtual rural worlds
Target hand-in date	17th February 2016
Supervisor/s name/s	James Gain

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Abstract (may be copied from thesis)	Manually creating virtual rural worlds is often a difficult and lengthy task for artists as plant species that appear, plant distributions and water networks must be deduced such that they realistically reflect the environment being modeled. As virtual worlds grow in size and complexity, climates vary on the terrain itself and a single ecosystem is no longer sufficient to realistically model vegetative content. Consequentially, the task is only getting more difficult for these artists. Procedural methods are extensively used in computer graphics to partially or fully automate some tasks and take some of the burden off the user. Input parameters for these procedural algorithms are often unintuitive, however, and their impact on the final results, unclear. This thesis proposes, implements, and evaluates an approach to procedural generate vegetation and water networks for realistic virtual rural worlds. Rather than placing vegetative content and water networks to reflect the environment being modeled, the work-flow is mirrored and the user models the environment directly by stating the resources it offers. These intuitive input parameters are subsequently used to configure procedural algorithms and determine suitable vegetation, plant distributions and water networks. By design, the precision and placeable plant species are configurable so any type of environment can be modeled at various levels of detail. Overall, the results are promising and the system used to model a multitude of test environments with minimal effort.
Funder Who funded the project? Ignore any bursaries or scholarships received.	Self-funded
Patenting opportunities Describe any IP that you feel may be worth protecting.	-
Public disclosure Has there already been any presentation or publication of the work?	-
Research materials Are there any research materials (cultures, software, etc. – for full description, see UCT IP Policy) that have been developed? If so, broadly describe them and indicate who will become the custodian of them, if not your supervisor.	As part of this thesis a piece of software was developed to procedurally generate virtual rural worlds.
Signature	**Date** 5.2.16

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