



Singapore ETH Centre  
for Global Environmental Sustainability

Future Cities Laboratory (FCL)

Dr. Stefan Müller Arisona  
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The Singapore ETH Centre for Global Environmental Sustainability (SEC), a joint effort between ETH Zurich and the Singapore National Research Foundation (NRF), will launch the Future Cities Laboratory (FCL) as its first research programme in Singapore in September 2010. The FCL programme will undertake cutting-edge research in disciplines ranging from material science, engineering and environmental technologies to communications technology and architecture. The FCL aims to research and develop solutions and guidelines directed towards the sustainable development of buildings, districts and regions.

Within the FCL, the Simulation Platform project aims at advancing digital technologies in urban design, modelling and simulation. In this context the FCL offers a

**PhD Position (Ref: FCL-SP-1008-02)**

**Interactive Modelling and Visualisation of Urban Design Scenarios**

**Your Tasks:** Your task will be to identify and evaluate existing methods and to advance the state-of-the-art of interactive modelling and visualisation techniques of urban scenarios. In particular, you will focus on the design and implementation of methods involving large dynamic datasets, and solve questions how to interact with them, for instance in terms of new touch-based or gestural user interfaces.

**Your Profile:** You are interested in working in a large research project and you have the ability to perform research that results in concrete tools and instruments applicable in real-world and industry-relevant scenarios. You are a highly motivated candidate with initiative and enjoy working in an interdisciplinary and multinational team. A diploma or Master's degree in Computer Science, Architecture or a related field is expected. Experience in programming, human-computer interaction, computer graphics, or visualisation is a plus.

You will work at the Campus of the National University of Singapore. The position will be available from January 1<sup>st</sup>, 2011.

**How to Apply:** Please send a PDF file containing above project reference, a letter of application, CV and names of 2 referees, **by October 31, 2010**, via email to Dr. Stefan Müller Arisona, [stefan.arisona@arch.ethz.ch](mailto:stefan.arisona@arch.ethz.ch), who is also available for further inquiries.



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##### **Urban Simulation**

**Your Tasks:** You will study and evaluate current urban simulation tools and techniques, identify shortcomings and suggest/implement improvements. In addition, you will establish connections to other simulation types, visualisation, and interactive design and modelling, in order to make urban simulation techniques more accessible and user-friendly.

**Your Profile:** You are interested in working in a large research project and you have the ability to perform research that results in concrete tools and instruments applicable in real-world and industry-relevant scenarios. You are a highly motivated candidate with initiative and enjoy working in an interdisciplinary and multinational team. A diploma or Master's degree in Computer Science, Architecture or a related field is expected. Experience in programming, simulation, and/or visualisation is a plus.

You will work at the Campus of the National University of Singapore. The position will be available from January 1<sup>st</sup>, 2011.

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**PhD Position at ETH Zurich, Switzerland (Ref: FCL-SP-1008-04)**  
**Inverse Procedural Modelling**

**Your Tasks:** Your work will be at the intersections of image analysis and graphics. Your task will be to design, implement, and evaluate new methods to infer structural descriptions of facades and buildings. Rather than the traditional point clouds or triangulated surfaces, these have the advantages to be compact and at the same time support more photo-realistic renderings. In particular, the aim will be to derive shape grammar rules from given real-world imagery of buildings, either in a computer-assisted way or fully automatically.

**Your Profile:** You are interested in working in a large research project and you have the ability to perform research that results in concrete tools and instruments applicable in real-world and industry-relevant scenarios. You master C++ and MatLab, and have experience with Linux. You are a highly motivated candidate with initiative and enjoy working in an interdisciplinary and multinational team. A diploma or Master's degree in Computer Science or a related field is expected. You should have good knowledge of Computer Vision techniques. Knowledge of Computer Graphics is an important added value. Experience in computational geometry and/or procedural modelling is a plus as well. You are willing to travel (conferences, visiting project partners in Singapore).

The work location for this position Zurich, Switzerland. The position will be available from January 1<sup>st</sup>, 2011.

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