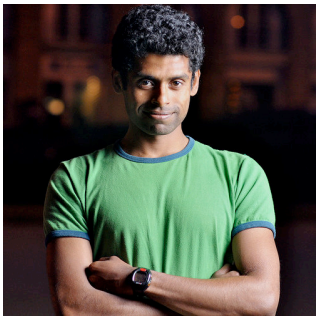
# Sagar Sen

Campus universitaire de Beaulieu, Rennes, Bretagne, 35042, France
Phone: +33676545355 Fax: + 33 2 99 84 71 71 E-Mail: ssen@irisa.fr, sagarsen@gmail.com

Website: http://web.me.com/sagarsen



## Objective

I am looking for a **Postdoctoral Position** in the area of developing model transformations to **scale existing formal methods**. The effective application will be ***design space exploration*** in seasonal modelling domains from science and engineering. For instance, my PhD thesis at INRIA, Rennes is about scaling the formal method Alloy for automatic effective model discovery. Check out the abstract:
https://www.irisa.fr/triskell/members/sagarsen/papers/thesis/abstract

## Experience

**Full-time Doctoral Researcher, INRIA Rennes Bretagne-Atlantique (http://www.irisa.fr) May 2007 - Current**

- Involved in the French National Project "Domino" and European project "S-Cube"
- Conducted research on "Automatic Effective Model Discovery" with applications to test model generation, product generation in software product lines, web-service orchestration synthesis.
- More information http://web.me.com/sagarsen

**Full-time Research Intern, INRIA Rennes Bretagne-Atlantique (http://www.irisa.fr) July 2006 – Oct 2006**

- Conducted research on model synthesis with constraints in the TRISKELL team
- Designed software and wrote research papers on the topic

**Part-time Teaching Assistant, McGill University (http://www.cs.mcgill.ca) Jan 2007- April 2007**

- Teaching assistant for various undergraduate computer science courses at McGill

**Full-time Research Assistant, JNCASR, Bangalore (http://www.jncasr.ac.in) Nov 2003- August 2004**

- Building a Beowulf cluster for High Performance Computing
- Programming in C using X-MOTIF and OpenGL for Molecular Dynamics Visualization
- Programming in C++ using MPI based libraries to assist large-scale physical chemistry simulations

## Education

**Ph.D. (Thesis), Computer Science at INRIA Rennes, France May 2007- March 2010 (Expected Submission)**

Thesis: "Automatic Effective Model Discovery"

Software Prototypes: Cartier, Metamodel Pruner, and Avishkar

**M.Sc. (Thesis), Computer Science at School of Computer Science, McGill University Sept. 2004- Aug. 2006**

*Commonwealth Fellow* (Out of selected 4 in India in all disciplines)

Thesis: "A Model Driven Approach to Design Engineered Physical Systems"
CGPA: 3.94/4

Relevant courses: Machine learning, probabilistic reasoning in A.I., object oriented software development, modeling and simulation, modeling and simulation based design, compiler design, Science writing and publishing

**B.E, Computer Science and Engineering (VTU, Bangalore)** **Aug. 1999- Aug. 2003**

Percentage: 82.5%

## Skills

I am experienced in most commonly used general purpose programming languages such as Java, Python, Modelica, Matlab, C, C++ with the ability to learn any new language rapidly for a given project. However, what intrigues most is systems design and simulation/execution at a high-level of abstraction. Model-driven engineering drives me. Briefly, I have experience in modelling environments such as Eclipse, model transformation languages such as Kermeta, AToM3, formal specification language such as Alloy and Prolog, and models of computation such as state machines, Petri nets, DEVS, differential algebraic equations, etc. Integrating these technologies to build complex software systems faster and in a reliable fashion is a skill I am in the process of nurturing.

## Academic Awards

1. **European Project S-Cube and Domino 3 year PhD award**: 68400 Euros

**2. Commonwealth fellowship** for 2 year masters program in computer science at McGill University (offered to only 2 students in Computer Science from India in 2004) (value is around $60,000 CDN)

**3. Quebec differential award** for the summer of 2005 by the Faculty of Science, McGill University ( value is around $5000)

**4. Top 2%** of class of about one hundred in bachelor's program

## Selected Publications

## Entire List: http://web.me.com/sagarsen/SagarPro/Publications.html

(1) **Sen S**., B. Baudry, Vangheluwe H., Towards Domain-specific Model Editors with Automatic Model Completion, Simulation : Transactions of the Modeling and Simulation Society, Feb. 2010

(2) N. Moha, **Sen S.,** Faucher C., Barais O., and J.-M.Jezequel, Evaluation of Kermeta on Graph Transformation Problems, Journal of Software Tools and Technology Transfer, 2010

(3) G. Perrouin, **Sen S**., Klein J., Baudry B, Le Traon Yves, Automated and Scalable T-wise Test Case Generation Strategies for Software Product Lines, ICST 2010, Paris, France (Acceptance rate 26.5%)

(4) **Sen, S**., N. Moha, B. Baudry, and J.-M.Jezequel, Meta-model Pruning. In Proceedings of MoDeLs. 2009. Denver, Colorado. (Acceptance rate: 16%) 2009

(5) **Sen, S.,** B. Baudry, and J.-M. Mottu. Automatic Model Generation Strategies for Model Transformation Testing. In Proceedings of International Conference on Model Transformation. 2009. Zurich, Switzerland. (Acceptance rate: 22%) 2009

(6) **Sen S.,** Baudry B., Mottu Jean-Marie. On Combining Multi-formalism Knowledge to Select Models for Model Transformation Testing. ICST'08 (Acceptance Ratio : 20%), 2008

## Balance in Life

**Sports**: **Competitive Rowing** with Ligue de Bretagne, McGill Crew with a number of **wins** and losses
Previous Sports: Dragon boat racing, soccer, swimming, and table tennis
Hobbies: Digital (Sports) Photography, Drawing and Painting, Guitar, Modern Jive

## Service

**Academic Reviewer**: Models 2008, Models 2009, ICST 2008,ICST 2009, ICSE 2009, ISSRE 2008, QSIC 2009
Rowing Coach for beginner and intermediate rowers
International Student Buddy (to help international students to McGill settle down in the city of Montreal)

## References

Dr. Benoit Baudry (INRIA, Rennes, France)
Prof. Jean-Marc Jezequel (INRIA, Rennes, France)
Prof. Hans Vangheluwe (Computer Science, Antwerp University, McGill University)
Prof. Sundaram Balasubramanian, CPMU, JNCASR, Bangalore

(Email addresses available on request)