Jose Manuel Faleiro

Department of Computer Science
Yale University
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New Haven, CT 06511
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Interests

Operating systems, distributed systems, security.

Education

Yale University Aug 2012 - present
PhD Computer Science
Advisor: Bryan Ford

Birla Institute of Technology and Science, Pilani, INDIA Aug 2007 - Jun 2011
B.E.(Honors) Computer Science
GPA: **9.68/10**

Professional Experience

Research Developer Jul 2011 - Jul 2012
Microsoft Research India
Research Intern Jan 2011 - Jun 2011
Microsoft Research India
Summer Intern May 2009 - Jul 2009
Bhabha Atomic Research Center, Mumbai, India

Publications

Generalized Lattice Agreement
Jose M. Faleiro, Sriram Rajamani, Kaushik Rajan, Ganesan Ramalingam, Kapil Vaswani
PODC '12. Proceedings of the 2012 ACM symposium on Principles of Distributed Computing. Pages 125-134.

Timing Information Flow Control
Weiyi Wu, Jose M. Faleiro, Bryan Ford
Poster at OSDI'12

Awards and Honors

Microsoft Research Tech Transfer Award for deploying DebugAdvisor (see below) to the MS Lync team.
BITS Merit Scholarship for outstanding academic performance.

Research Experience

Timing Information Flow Control
Timing side-channels have been shown to leak information at a very high bandwidth. This problem is particularly exacerbated in the cloud because of the possibility of sharing infrastructure with an attacker. I am working on using deterministic execution to mitigate the risks of side-channels by constraining the ability of an attacker to discern the timing and ordering of events.

CScale, Microsoft Research India
CScale is a novel distributed programming language and runtime. I helped build the underlying data-layer and messaging-layer using the Windows Azure platform. This required building logging infrastructure which could help verify correctness of execution.

Service Dependency Manager, Microsoft Research India
Service Dependency Manager is a software dependency manager which will allow users to track dependences across service boundaries. I am currently involved in building a notification mechanism to help clients painlessly deal with changes to services by analyzing call-graphs.

DebugAdvisor, Microsoft Research India
DebugAdvisor is a recommendation system for debugging. I worked on recommending people, files and binaries which could be helpful in fixing a bug. We used a graph to model a software repository and built a semantically rich inference mechanism on top of it. I formulated an algorithm which allowed us to rank entities related by analyzing the graph's path structure. The algorithm gave very good precision (0.792) and recall (0.8). My work has been deployed for internal use within Microsoft's large software development teams.

Technical Skills

Languages: C/C++, Java, C#, OCaml, F#, SQL, MIT-Scheme, Verilog.
Frameworks: .NET, Windows Azure, Racket, Linux Programming Environment.