

# Sharpen Your Axe – A Micro Virtual Machine Which You Can Depend On

Kunshan Wang<sup>\*</sup>, Yi Lin<sup>\*</sup>, and Steve Blackburn<sup>\*</sup>

<sup>\*</sup>Australian National University

## Abstract

Just-in-time compiling, concurrency and garbage collection are three critical components of modern virtual machines, but they are either missing or poorly implemented in many real-world VMs. We present  $\mu$ VM (a.k.a. MicroVM), a small VM which aims to provide the above three functions. It has a simple language-agnostic instruction set, but is rich enough to support higher-level programming languages. Currently, two working prototypes of  $\mu$ VM have been created and a subset of Lua has been implemented upon  $\mu$ VM for experiment. We believe that depending on such a low-level VM, higher-level languages can be implemented with better performance and less difficulty.

## Talk

I would like to give a very brief presentation in less than 5 minutes. I will talk about the basic ideas of  $\mu$ VM and the current progress of that project.