



# Karu Sankaralingam

## University of Wisconsin-Madison

Wednesday, October 14  
1:00pm-2:00pm  
CSE 1202, EBU-3B

## Challenges and Promise of Open Source Hardware

Due to inexorable increases in manufacturing costs, the microprocessor industry has gotten consolidated into a small number of fabless design companies and an even smaller number of fabs. Perhaps related to the small number of players, innovation in hardware design is slowing down. One measure of indirect evidence is the miniscule number of hardware startups. In this talk I will describe some of the trends that have gotten us to this state. I will then describe how there is emerging critical mass in open-source hardware that can help unleash a new wave of innovation and lay the foundation for many future hardware innovations and hardware startups. I will describe a simplified view of how open source software has enabled massive software innovation and show how open source hardware can follow this template. Specifically I will relate this back to an open source GPGPU design called MIAOW that is underway in my research group and describe our plans to develop possibly the first open source graphics card. MIAOW was recently presented at HOTCHIPS and in the talk I will (try to) do a demo of our FPGA prototype.

### Bio:

Karu Sankaralingam is an Associate Professor in the Computer Science department at UW-Madison. His research area is microprocessor design. He likes research, building and breaking hardware, teaching, cats, and dogs in approximately that order.