We've gotten pretty good at programming traditional computers. Surprisingly, though, traditional computers only cover a tiny fraction of the market. For every notebook and iPhone, there are dozens of "microcontrollers", controlling everything from microwaves to the flaps on an airplane. Unfortunately, they are much more difficult to program than traditional computers. It's challenging for novices to get started and it's hard for experts to build complex and reliable systems. We've built a system called Owl that we think can reverse this trend. It's a virtual machine for microcontrollers. Think of it as a program that runs other programs, checking for errors along the way. It also contains a suite of tools that helps the user see inside of and even control the system as it is running. Individually, these ideas are nothing new on larger computers, but the way we've been able to combine them and shrink them down is nothing short of revolutionary.

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