

†Joshua Adkins, †Brad Campbell, †Branden Ghena, ‡Neal Jackson, †Pat Pannuto, and Prabal Dutta

†University of Michigan
‡UC Berkeley

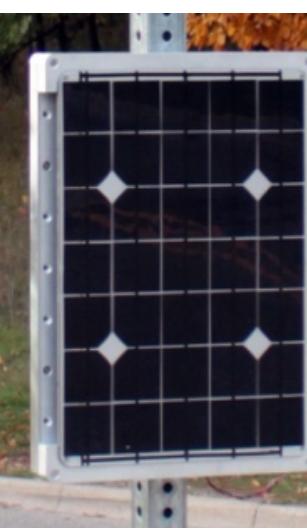
October 26, 2016

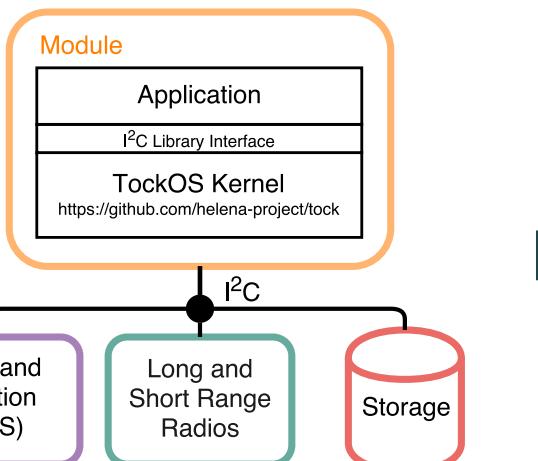


A city-wide sensing platform that is deployable, scalable, and driven by applications.

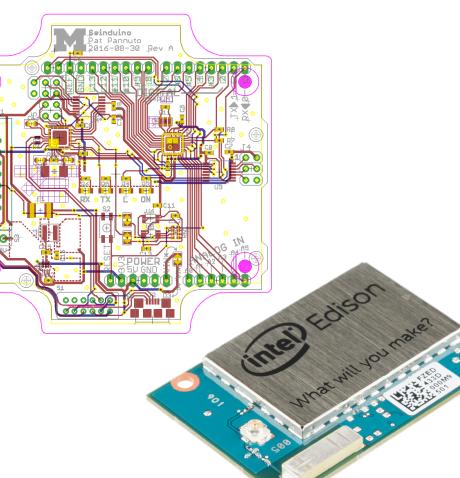
Each signpost system is a self-contained unit capable of powering itself, communicating wirelessly, and supporting several sensor modules. The system bolts onto existing signposts located in a city to provide distributed sensing points with minimal installation complexity. By supporting plug-in sensor modules, the system is upgradable as applications and sensing needs change.

Energy-harvesting removes the need for battery replacement or expensive AC mains wiring.



 Onboard storage, communication, and energy management, plus software libraries for modules simplifies adding sensor modules to the system.

Arduino compatible modules, an onboard Linux computer as a resource, and a cloud infrastructure simplify application development.



Key Research Themes

1. Private by design: do not collect what must be kept private. Filtering done at the hardware level, no camera, no identifying data collected.
2. Energy-proportional computing: Sensing and communication must scale to current harvesting conditions.
3. Distributed applications: Balance signpost-local resources, communication bandwidth, and cloud resources.

Current Applications

