**FoneAstra: Making Mobile Phones Smarter**

**GOAL**: remote sensing using cost-effective and energy-efficient commodity mobile phones

**Background**
- Mobile phones are the de-facto computing device in much of the world
- Easily affordable low-tier phones are highly resource-constrained
  - minimal hardware does not support applications
  - communicate only with voice and SMS
- Sensor networks are difficult to set up and manage

**Our Solution - FoneAstra**
- Extend phone capabilities via a low-cost, programmable hardware add-on
- Support for application-specific sensing and computation
- Leverage phone as modem for communication and for I/O with user

**Applications**
- Cell tower-ID based location tracking
- Vaccine cold-chain monitoring
- Pasteurization in human milk banks

**On-going and future Work**
- In-field deployments with partner NGOs
- Support for audio-based I/O
- Interface to Smart Phones
  - USB-powered sensors, BT communication
- Applications in healthcare—delivery, point-of-care-diagnostics

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