Smart Cradle System for Automated Baby Monitoring

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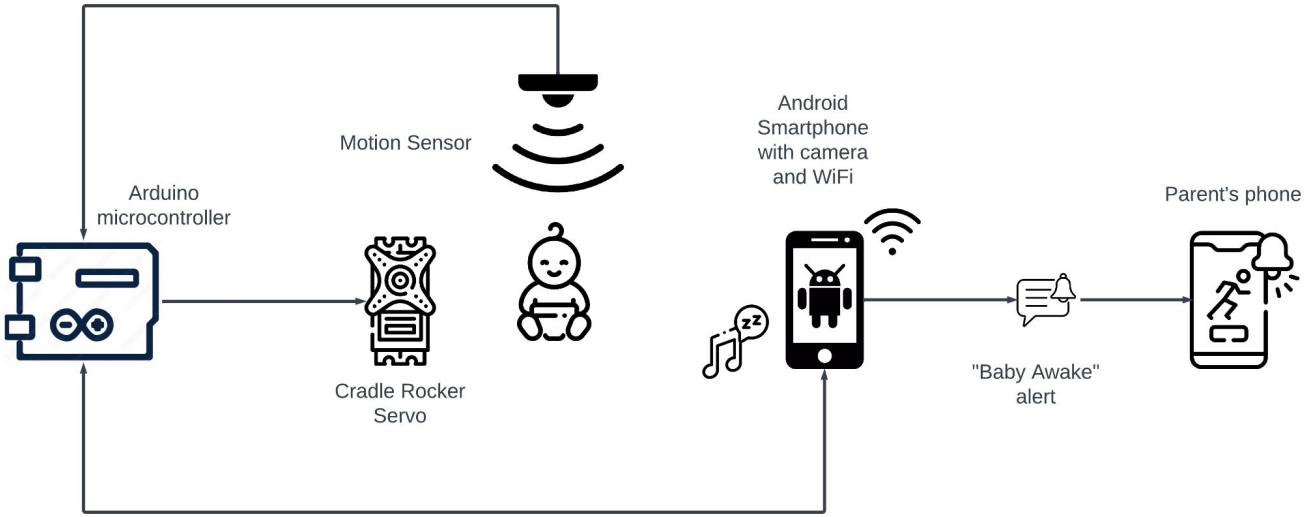
The Idea

- Responding to newborns waking up in the middle of the night is a major hassle.
- Parents of newborns lose 6 months of sleep during the first 24 months of parenting [1].
- Sleep deprivation has adverse health effects on adults.
- Babies left unattended to cry for prolonged periods may lead to undue amounts of stress [2].
- What if we could leverage AI to detect the baby's current mood?
- What if the cradle could accurately respond to the baby's needs?
- A smart cradle would greatly reduce the load on new parents.
- The result: sleep for all.

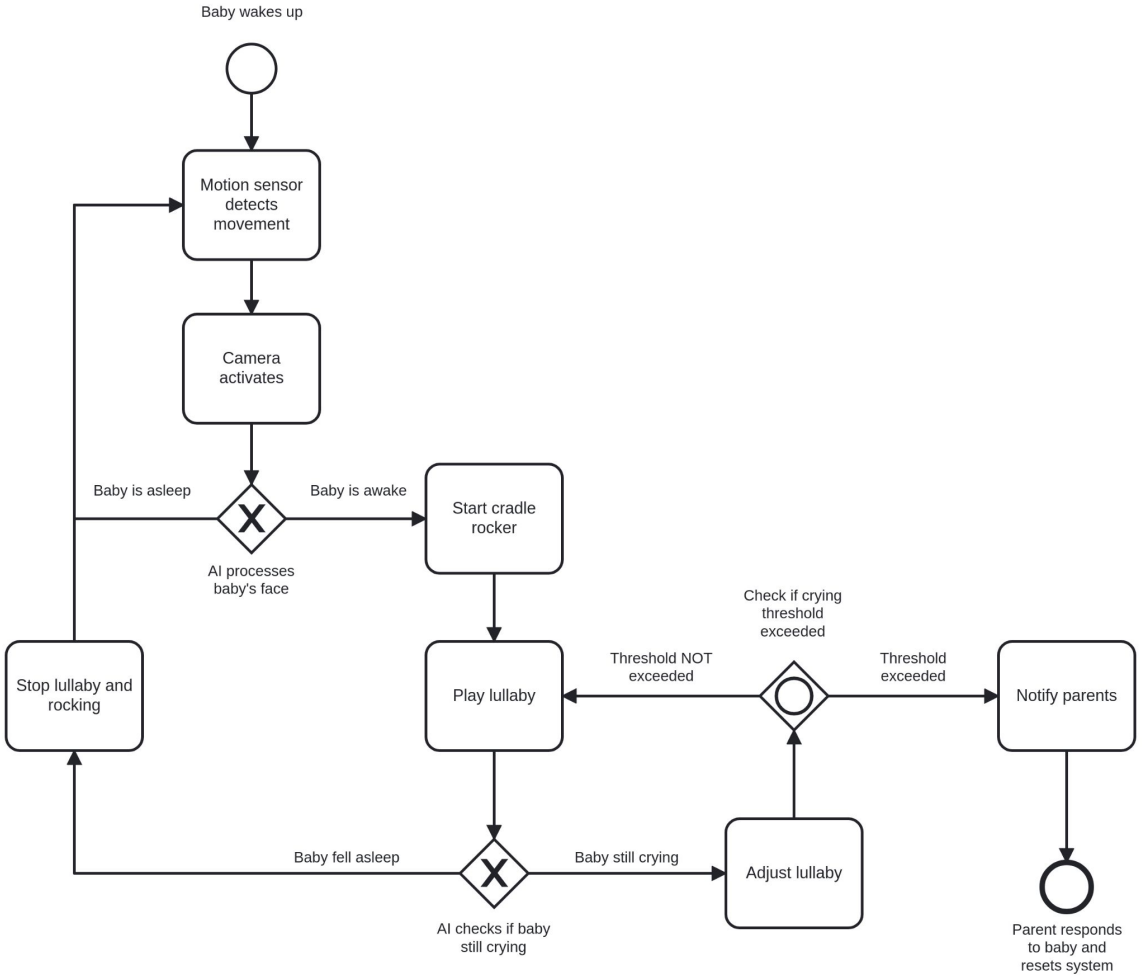
[1] https://www.medicalnewstoday.com/articles/195821
[2] https://www.nct.org.uk/baby-toddler/crying/it-ok-let-baby-cry

A Simulated Demo

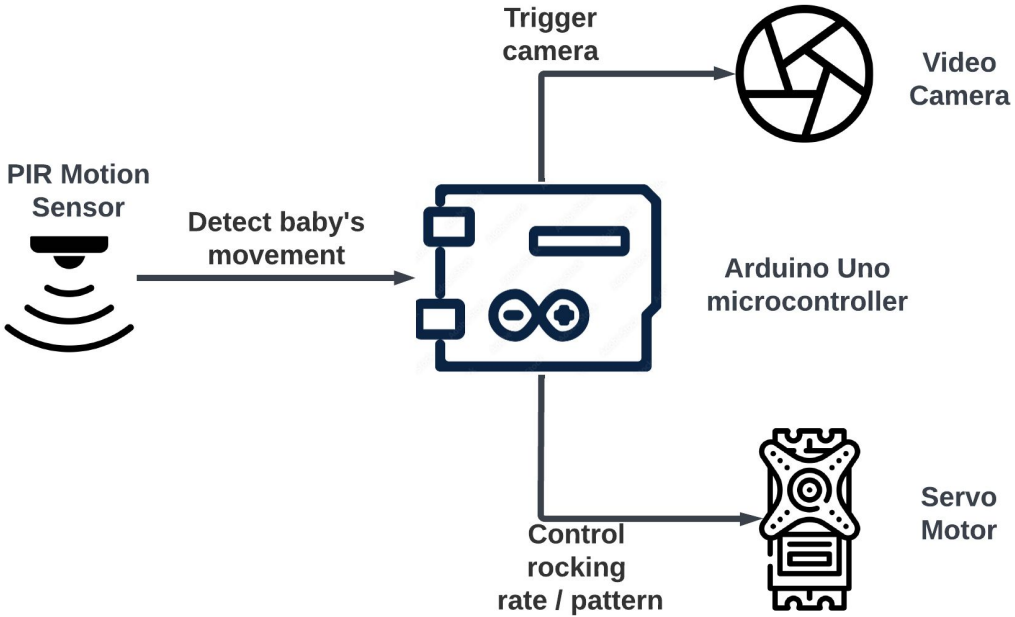
Hardware at a glance



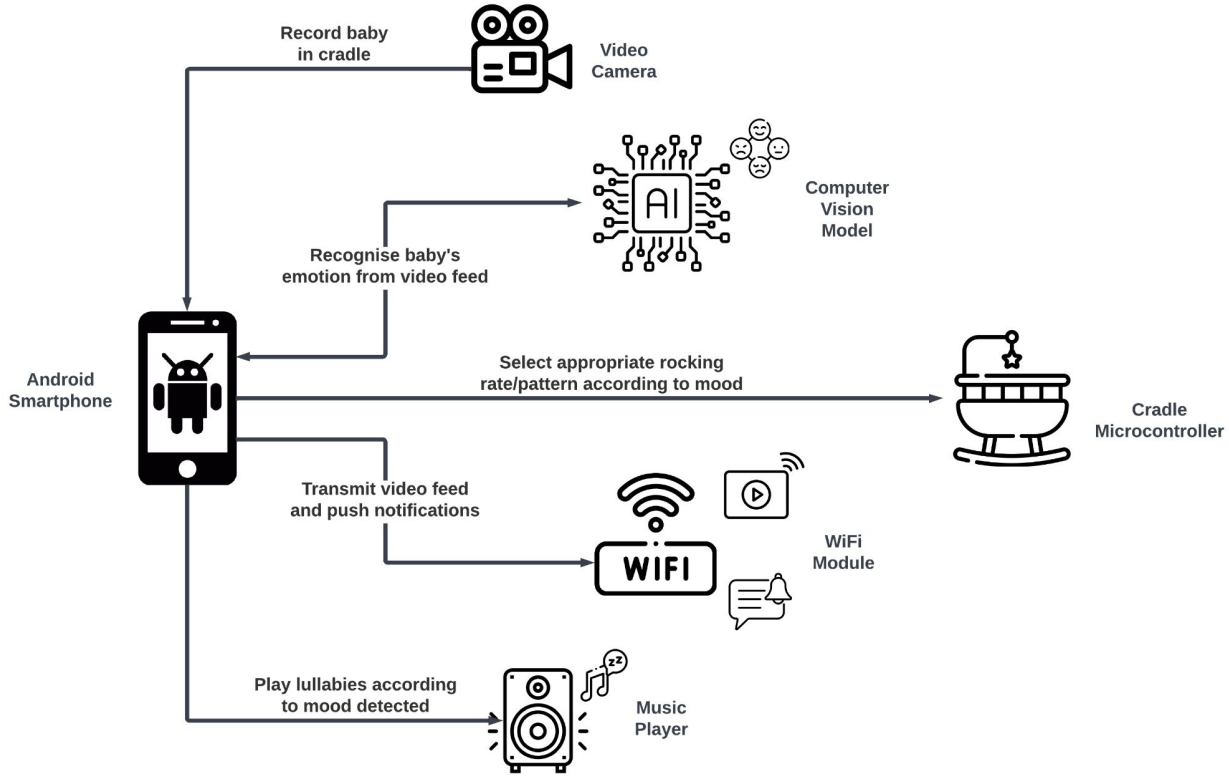
How it's meant to work



What the Arduino is responsible for



What the smartphone is responsible for



TODO

- Write microcontroller code.
- Find dataset of baby images
- Train MobileNetV2 model using transfer learning.
- Develop Android app.
- Build prototype of smart cradle.
- Interface Arduino-Android via USB.
- TEST TEST TEST

For more information, please refer to:
https://treedweller98.github.io/CradleSite/