

Future of CPS

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What is CPS?

- Definition 1: **CPS = Cyber + Physical**
- Corollary: *non*-CPS
 - Cyber only: traditional real-time scheduling theory
 - Physical only: traditional feedback control theory
- Definition 2: **CPS > Cyber + Physical**
- CPS: wireless-control co-design
 - Focus: **interactions** between wireless and control

CPS is a new approach

- CPS = Embedded Systems?
 - **Yes**, they refer to the same applications/systems.
 - **No**, they focus on different **approaches**
- The new approach: **CPS co-design**
 - Embedded computing works on cyber abstractions.
 - CPS **breaks the barrier** between cyber & physical designs.
 - CPS co-design will **drastically improve** embedded systems
- Positive side effects on the community
 - Multidisciplinary research
 - Holistic perspective on systems design
 - Direct impacts on society