

# Processing and Communicating Sensing Information

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# Processing

- SP level
- At higher levels
  - ML, Inference, Decision Making Under Uncertainty

# Research Questions

- SP in real environments
  - Data scrubbing
- Behavioral feedback (long time frames) vs actuation ( ( multiple dimensions) interventions)
- Where is data best processed?
  - Under complex collections of constraints (energy, real-time, ...)

# Research Questions

- Cockpit of ICU (processing and communication, alarms, ... dynamic collection of devices)
  - JIT verification
- Interoperability/Composition (dynamic plug-n-play, ...)
  - Higher level semantics
  - Hybrid systems

# Research Questions

- Processing context dependent
- New processing capabilities
- Handling uncertainty at every level
- Systems of systems
  - Dependencies/Assumptions
- Modeling

# Communicating

- Wireless Level
- Human Level

# Research

- Wireless (co-existence in same bands)
- Reliability (data delivery)(real-time)
- Scaling
- Data overload (what data to collect/show)
- Human factors
  - Patients, Caregivers, Doctors, etc.
- Amt of autonomy vs user in loop

# Other Topics

- Security
- Authentication
- Maintainability
- Data Provenance