

## Class 2 Perspectives on Self-Healing Systems

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### Today's Class

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- Discuss readings
    - > what are they arguing?
    - > what are their biases?
    - > how are they related to each other?
  - A framework for understanding SHS engineering issues
    - > key ingredients of a SHS
    - > dimensions of variability
  - Topic taxonomy
    - > what should we study in this course?
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## Course Mechanics

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- Scribe
  - Summaries
  - Web
  - Other?
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## From Last Class

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- Evolution of computing
    - > Mainframe, desktop, network, ubiquitous
  - Consequences for software
    - » Forces a shift from design-time to run-time effort
      - Exhaustive verification and testing not possible
      - Off-line repair and enhancement is not an option
    - » New requirements to reduce burden on users
      - Manual reconfiguration does not scale
    - > Systems must automatically and optimally adapt to handle changes in user needs; variable resources; faults; user mobility
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## Issues

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- When are adaptation mechanisms determined?
    - > Design time; run time
    - > Who determines these? Where does adaptation knowledge/expertise come from?
    - > Level of adaptation knowledge? Categories vs steps?
    - > Immunology analogy
      - » Aids metaphor – attacking the immune system
    - > Darwinism for computing systems?
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## Issues (continued)

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- Topics
    - > Distinguish between problem classes and solution classes
    - > What are “foundations”?
    - > User Interfaces
      - » Usage patterns, adapting to heterogeneity of devices
    - > User-aware adaptation
      - » Adaptive tutoring & cognitive modeling
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