

Adaptive Systems - Week 1

Part 1 intro + Part 2

Cross dis - Biology/science, Artificial, engineer

10 lecture topics over 11 weeks

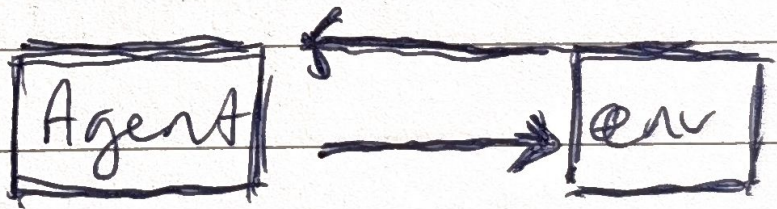
4 labs

7 Seminar

End of slides = Recommended Reading

1.2 Slides

Coupled Systems



- two way effects
- Circular causality
- All adaptive systems involve feedback

Feedback systems = tennis serve, see where ball goes and adapt to the outcomes

Evolutionary fitness is a two way relationship

Survival of the fittest - does not mean physically strongest/best. it means best fit to environment

e.g. a fish becoming less armoured in fresh water envs

Island evolution holds interesting examples

Evolution doesn't always mean obj better. Just fit to environment

what is successful fit?

Environments also need to be capable of adapting too - think about a forest

timescales

- evolution - slow adapts to slow changes
- learning - adapt to fast changes & unforeseen