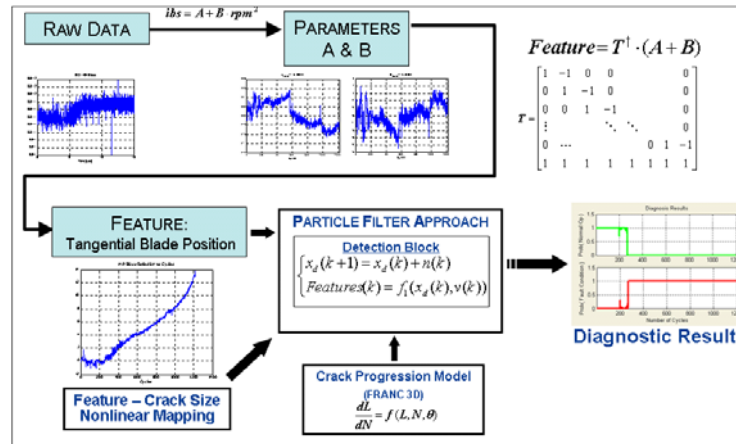


EE 5322 Intelligent Control Systems Spring 07

F.L. Lewis

<http://arri.uta.edu/acs>

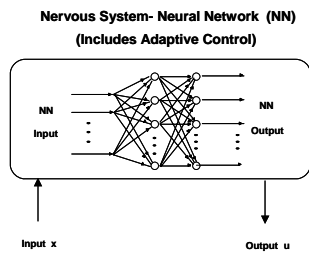
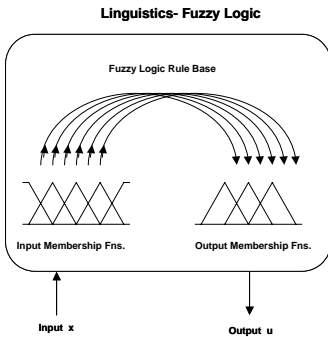
This course covers principles of intelligent control including adaptive, learning, and self-organizing systems. Neural networks and fuzzy logic systems for feedback control. Discrete event systems, Dempster-Shafer, Petri Nets, and decision-making supervisory control systems. Wireless Sensor Networks, intelligent machinery monitoring and repair. Advanced sensor processing including Kalman filtering and sensor fusion. System Identification. Prerequisite: none. Course outline is linked to <http://arri.uta.edu/acs>



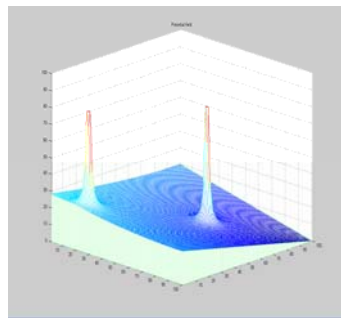
Intelligent Diagnostics & Prognostics for Aircraft Systems

Applications of Intelligent Systems

- Communications systems network control
- Communication Systems Signal Decoding
- Navigation, Guidance, and Control
- Wireless sensor network decision & control
- Fault diagnosis and prediction for:
 - bridge and civil infrastructures
 - vehicle systems and automotive
 - aerospace systems
- Speech processing
- Mobile and Swarm Robotics, Formation Control
- Traffic Systems and Vehicle Control
- Control of Complex Industrial Processes



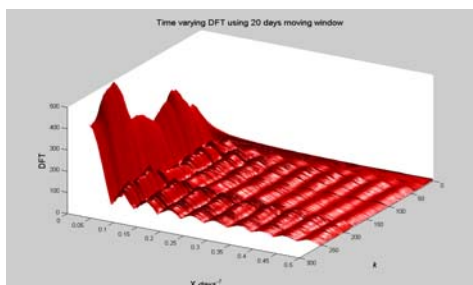
Fuzzy logic systems are based on linguistics, and neural networks on biological nervous systems. Both can be used to design learning control systems.



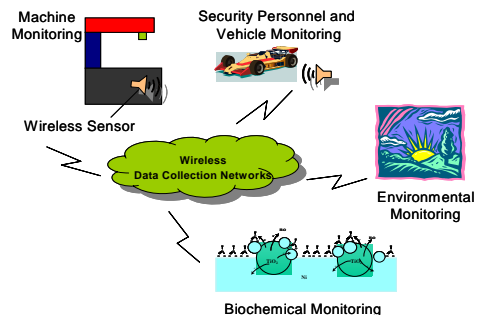
Mobile robot planning and control



Statistical Stock Market Analysis and Prediction



Fast Fourier Transform & Speech Processing



Wireless sensor networks for machinery monitoring and security area denial