Summer Intern Proposal

Title:
Advanced Methods for Assessment of System Reliability and Residual Life

Supervisors:
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Outline:
Health and Usage Monitoring Systems (HUMS) have become a standard part of new military systems. They provide a wealth of data on the system's usage and the environment in which the system operates. This data could be better exploited to make early predictions of likely problems and system failures. Furthermore, these predictions could be used to increase system availability and make maintenance policies more cost effective. The proposed research would look at applying a combination of decision-theoretic methods and computer simulation to produce a generalised framework for defining informed maintenance schedules for real-life military systems. The proposed work would include implementing a computer model of the framework, validating that with test data and producing a report.

Pre-requisites:

- Ability to implement models in one of the programming languages: C/C++, Java or MATLAB.
- Taken courses in probability and calculus.
- Familiarity with Bayesian networks is desirable but not essential.