Application of Fuzzy Logic to the Functional Clustering of Missile Systems

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There exist many physical relationships between dynamic systems that humans can infer data from where an exact science may not be possible or plausible to apply. The imprecision or inaccuracy of our attempted models and sensors often lead to errors when we leave seemingly simple tasks to a machine; a seasoned expert may know from experience how to react under certain conditions for which a robot may not have been trained or may not have sensors to a high enough precision. Fuzzy Logic is an attempt to remedy that. If we can teach machines to infer solutions from previous knowledge then we can unlock new potential in computational applications. This topic discusses the use of Fuzzy Logic in the rapid classification of known and unknown missile systems. When a hostile missile is launched, it is crucial to know the geometry and capabilities of the impending ballistic. Fuzzy Logic mechanisms could play a large role in this defense application as well as a complemental tool to existing defense systems.