

# 学术报告会

时间: 2024年12月25日 (周三) 10:00-11:00  
地点: 电信群楼2号楼410会议室

## Modeling Sensor Fusion Performance for Enhanced Situation Assessment 增强情景分析的信息融合评估系统建模

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**Abstract:** This presentation outlines a predictive methodology for evaluating multi-sensor fusion performance in aerial monitoring scenarios. By integrating individual Receiver Operating Characteristics (ROC) curves into System Operating Characteristics (SOC) curves, the framework models tradeoffs between detection probability and false alarm rate under varying conditions. Using a grid-based method to partition the Region of Interest, system-level objective functions maximize coverage and detection reliability within resource and environmental constraints. Leveraging multiple sensor modalities, the framework improves target detection and situational awareness, achieving greater accuracy and coverage than standalone sensors. The integration of SOC curves with environmental and terrain data guides optimal sensor deployment. Future work will expand sensor types, refine fusion algorithms, and enhance adaptability for real-world applications.

**Bio:** Dr. Chang is a dedicated researcher with expertise in data fusion, machine learning, and probabilistic inference for decision-making. He received his M.S. and Ph.D. degrees in Electrical Engineering from the University of Connecticut. Since 1992, Dr. Chang has been a professor in the Systems Engineering and Operations Research department at George Mason University, where he also directs the **Sensor Fusion Lab**. Dr. Chang has published nearly 300 papers covering topics such as multitarget tracking, sensor fusion, Bayesian network modeling, machine learning, and financial engineering. He has served in editorial roles, including Editor on *Tracking/Navigation Systems and Large-Scale Systems* for *IEEE Transactions on Aerospace and Electronic Systems*, as well as an editor for *IEEE Transactions on Systems, Man, and Cybernetics*. Dr. Chang also chaired the Technical Program of *Fusion 2009*. His recognition as an **IEEE Life Fellow** reflects his impactful contributions to the field of sensor data fusion and Bayesian inference.