

# Introduction to Data Fusion

## Lecturer

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## Summary

This is a one day course on data fusion given at ICARCV, December 2002 in Singapore . It is essentially a cut-down version of a three day intensive course on Multi-Sensor Data Fusion given by ACFR staff. The course is aimed at professional engineers and research scientists wishing to acquire a practical knowledge of data fusion methods. The course covers essential methods in multi-sensor estimation, identification, distributed and decentralised data fusion methods. The course emphasizes applications in multi-sensor tracking, distributed sensor systems and multi-sensor navigation.

## Prerequisites

This course is intended for practicing control or systems engineers, advanced graduate students or equivalent. Students are expected to have prior experience with state estimation methods (equivalent to KC-1).

## Syllabus

Part 1: Probabilistic models, discrete and continuous Bayesian and information fusion methods. Laboratory: Data fusion with Bayes theorem.

Part 2: The multisensor Kalman filter, non-linear Multisensor methods, multisensor multi-target tracking. Laboratory: Multisensor multi-target tracking.

Part 3: Distributed and decentralised data fusion methods, multi-person decision theory. Laboratory: Distributed and decentralised data fusion.

## Course Materials

Course material consist of a pdf file of slides an a zip file of Matlab code implementing various algorithms discussed in the course.