CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

DATA MINING
THESIS PRESENTATION

Friday, April 13
2:00 – 3:00 pm in MS 101

The Discovery by Data Mining of Rogue Equipment in the Manufacture of Semiconductor Devices

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Abstract

Finding equipment causes of faulty devices in semiconductor manufacturing is inhibited by several difficulties. The main area of focus here is biased data mining methods. By judiciously selecting two data mining methods from IBM's data mining workbench, the Intelligent Miner for Data (IM4D) discovery of the known root cause of a decrease in device parametric data from a manufacturing line is more likely to be obtained. The methods employed are the radial basis function network with chi-square ranking for feature selection followed by a classification tree to provide rules. A graphical representation of the rules is introduced which makes the determination of the root cause easy visually. The value of this approach was proven when it revealed the key candidate for a problem, in IBM's primary manufacturing line, which was later confirmed by traditional engineering methods to be the root cause.

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