

NEW COURSE - WINTER 2009

Reliability and Variability Aware Architectures - CSE788.I11

Outline

Reliability of computing devices is one of the "grand challenges" the computing industry will be facing over the next decade and beyond. The growth in microprocessor performance, which has driven our industry for many years, is now threatened by the reliability challenges brought on by the very aggressive technology scaling.

This course explores the state of the art in architectural and system innovations that enable the continued improvement in performance in the face of these challenges. We will discuss new architecture and system designs that help detect, mitigate and tolerate a variety of error classes including transient errors, faults due to process variation, wearout and aging, design errors, etc.

We will also talk about ways in which architecture can help make software more reliable by providing support for efficient software debugging.

The goal of this class is to learn the state of the art, but also to come up with new ways of designing reliable systems from unreliable components.

Instructor: Dr. Radu Teodorescu

Recommended background: CSE775 or equivalent.

Class days, time and location: TR, 0930-1048, DL 0317.

