Analysis and Prediction of the Dynamic Behavior of Applications, Hosts, and Networks

Reading List

Note: We will not read all of these papers in class. The syllabus is the final word on the specific papers that we shall read in class.

Most of these papers are available from the web (use http://www.google.com and http://citeseer.nj.nec.com to find them. I will make photocopies of the older, non-web papers available as needed.)

Host Characterization and Prediction


Network Characterization and Prediction

20. N. Duffield and M. Grossglauser, *Trajectory sampling for direct traffic observation*, SIGCOMM '00.

**Web, Video, and Audio**

34. M. Crovella and A. Bestavros, Self-similarity in world wide web traffic, SIGMETRICS ’96.
36. A. Bavier, et al, Predicting MPEG execution times, SIGMETRICS ’98.

Games and Interactive Applications


Other Applications

50. T. Kroeger and D. Long, Predicting file system actions from prior events, USENIX ’96.

Measurement and Prediction Systems

64. Grid Performance Working Group (www.gridforum.org)
65. Grid Information Services Working Group (www.gridforum.org)

Measurement and Sampling Theory

66. PASTA Principle (see V. Paxson, End-to-end routing behavior in the Internet, above)
67. Nyquist Criterion and Sampling Theory (see A. Oppenheim, et al, Signals and Systems, below)
Data Analysis Techniques


70. Time Series Analysis (see Statsoft Guide, Box’s Time Series Analysis,

71. Wavelets (http://www.mathsoft.com/wavelets.html)


73. Signal processing and Fourier (see A Oppenheim, et al, *Signals and Systems*, below)


Added Materials


Performance Analysis Books

• This book covers most common areas of performance analysis. It is perhaps the one performance analysis book that belongs on everyone’s bookshelf. However, none of its coverage is particularly deep, and the author makes undeclared assumptions.

General Books

• A very readable introduction to basic probability theory and classic parametric statistics.

• An excellent reference book and introduction to many different areas of modern statistics.

Mathsoft, Inc, The S-Plus Guide to Statistics, Volumes 1 and 2,
• Good reference book with examples given in S-Plus.

• Good introduction to linear systems theory

• Good book on this topic.

• Good introduction to control systems theory.

• The classic text on linear time series analysis.

• The classic text on queuing theory.

Henry Abarbanel, Analysis of Observed Chaotic Data, 1996.
• How to use concepts from chaotic dynamics to study data and systems.

• The seminal book on this topic