Computer performance modeling

Our work in this area is focused on dynamic models of computer systems, with special emphasis on disk subsystem modeling. We developed an efficient dynamic model of disk subsystems that includes very accurate modelings of seek time, and nonlinear effects caused by cashing and disk access optimization performed by operating systems. Another project was a Queuing Network Animation System (QNAS) that is available on Internet. Finally, we used the LSP criteria to develop algorithms for optimization of computer system configurations.

Publications:

1. Dujmović, J.J., Optimizing Computer System Configurations. Journal of Automatic Control, Vol. 13 (2), pp. 23-33, 2003.

2. Dujmović, J.J., D. Tomasevich, M. Au-Yeung, Measurement and Modeling of Disk Subsystem Performance. Section 8.1 in V.G. Oklobdzija (Ed.), *Computer Engineering Handbook*, pp. 8-1 – 8-20 CRC Press. 2002.

3. Pan, F. and J.J. Dujmović, QNAS – a Queuing Network Animation System. CMG 2002 Proceedings, Vol. 2 pp. 821-832, 2002.

4. Dujmović, J.J. and D. Tomasevich, Calibration and Comparison of Disk Unit Models. The 27th International Conference for the Resource Management and Performance Evaluation of Enterprise Computing Systems. CMG 2001 Proceedings, Vol. 1 pp.315-325, 2001.

5. Dujmović, J.J., D. Tomasevich, M. Au-Yeung, Measurement and Modeling of Disk Subsystem Performance. The 25th International Conference for the Resource Management and Performance Evaluation of Enterprise Computing Systems. CMG 99 Proceedings, Vol. 2, pp. 670-679, 1999. [*Best Paper Award*]