Seminar Topics and Literature

A. Seminar Topics with Emphasis on Adaptivity

A.1 Architecture-Based Approach (presentation: 12.02)


A.2 Architecture-Based Adaptation Middlewares (presentation: 19.02)


Background Material
(for more detailed info, recommended if you have the time and interest)


A.3 Reflective and Adaptive Middlewares (presentation: 11.03)

- ReMMoC: Grace, P., Blair, G.S., Samual, S., "ReMMoC: A Reflective Middleware to Support Mobile Client Interoperability", Proceedings of the International Symposium on Distributed Objects and Applications (DOA'03), Catania, Sicily, November 2003. (?p)

- OpenCOM: Coulson G., Blair G., Grace P., Joolia A., Lee K., Ueyama J. OpenCOM


A.4. Aspect weaving (presentation: 08.04)

• Introductory material on paper AOP or AOSD:

A.5 Other Examinable Material (on adaptivity)


D. Seminar topics with emphasis on dependability

D.1 Practical reports on dependability (presentation: 12.02)

• "Causes of Failure in Web Applications" by Soila Pertet and Priya Narasimhan

• Other relevant reports on http://www.cs.cmu.edu/~priya/downtime.html (Check if there are any on distributed systems)

• If there is none on distributed systems, then "How do Mobile Phones Fail? A Failure Data Analysis of Symbian OS Smart Phones" Marcello Cinque, Domenico Cotroneo, Università di Napoli, Napoli, Italy Zbigniew Kalbarczyck and Ravishankar Iyer, University of Illinois at Urbana-Champaign, IL, USA
  
  (This paper is not about distributed systems but apart from being an entertaining practical report, it describes interesting techniques for evaluating dependability.)

D.2 Dependability QoS (presentation: 26.02)

• Section 7.5.1 in TvS "Design and Evaluation of a Conit-based Continuous Consistency Model for Replicated Services.” ACM Transactions on Computer Systems, by Yu and Vahdat
  
  (No need to read formals proofs and hard technical parts, such as Section 4.4, 4.5, and 7. Focus on policies, examples, tradeoffs, and discussions.)

  Recommended

• "On the composability of consistency conditions" Information Processing Letters by Friedman, Vitenberg, and Chockler
  
  (Focus on the general meaning of the framework and each condition, not on the formal notation.)
D.3.1 Classical replication and group communication I (presentation: 04.03)

- Total Order Broadcast and Multicast Algorithms: Taxonomy and Survey. X. Défago, A. Schiper, and P. Urbán. (No need to read Sections 7 and 8. The main focus is on the model, the problem, and classes of solutions in Sections 2 and 4. Sections 3 and 5 should be presented selectively.)

  Recommended:
  - Chapter 5 in the Distributed Systems collection by Sape Mullender.

D.3.2 Classical replication and group communication II (presentation: 04.03)

- Exploiting Group Communication for Replication in Partitionable Networks
  [Link](http://people.csail.mit.edu/idish/Abstracts/keidar-chapter2.html)

D.4. Dependability in Web Services (presentation: 01.04)

- "Extensible Web Services Architecture for Notification in Large-Scale Systems" by Ostrowski and Birman

D.5. Scalable membership management and failure detection (presentation: 15.04)

- “Correctness of a Gossip Based Membership Protocol” by Andre Allavena, Alan Demers and John Hopcroft (Skip the appendix. You can also avoid some math in Sections 4.2 and 4.3.)

- Introductory, high level overview of Scamp[7], Newscast[9], Cyclon[16].