CSW Assessment: topics
FACP October 2004

October 12, 2004

1 Topics and Sources

The following 25 topics and references are taken from undergraduate project proposals in 2003-04.

You must select one of the topics given. You can then pick any academic aspect of the general topic, whether or not it is covered by the references lists. **You will need to conduct a literature search.** The references given are merely general pointers (as per the project proposals from which they are taken), and **not** sufficient for the assessment.

Staff initials listed against topics are merely suggestions of those who have proposed recent projects in these areas, or who might have further relevant literature listed on their web-sites; these staff do not have any direct involvement in setting up or running the assessment.

Please note that since the references are taken from the project proposals they do **not** conform to the citation requirements for this assessment. No routine annotation is provided; some are general references and some specific to particular aspects of the topics.

References are provided merely as a starting point. Any other academic-style source can be used in the assessment; if in doubt, consult fiona@cs.york.ac.uk by email; answers will be posted to the assessment web site.

1.1 HCI and Interface Design (ADNE,PCW)

- Dix, A., Finlay, J., Abowd, G. and Beale, R. (2003). *Human-Computer Interaction*. London, Prentice-Hall.
- Edwards, A. D. N., (ed.) (1995). *Extra-Ordinary Human-Computer Interaction: Interfaces for Users with Disabilities*. Cambridge Series on Human Computer Interaction New York: Cambridge University Press.
- McCarthy, J. and Wright, P. (2004). *Technology as Experience*. Cambridge, Massachusetts, MIT Press.

- Norman, D. (1988). *The Psychology of Everyday Things*. New York, Basic Books. Republished as: Norman, D. (2002). *The Design of Everyday Things*. New York, Basic Books. Preece, J., Rogers, Y. and
- Sharp, H. (2002). *Interaction Design: Beyond Human-Computer Interaction*. London,
- Wiley. Spolsky, J. (2001). *User Interface Design for Programmers*. Berkeley, Apress.

1.2 Formal Patterns (FACP,SK,SS)

- S. Stepney and F. Polack and I. Toyn, A Z Patterns Catalogue I: specification and refactorings v0.1, University of York Department of Computer Science, 2003, YCS-2003-349
- C. Larman, *Applying UML and Patterns. An introduction to object-oriented analysis and design and the unified process*; Second Edition. Prentice Hall PTR, Upper Saddle River NJ, 2002.
- E. Gamma and R. Helm and R. Johnson and J. Vlissides, *Design Patterns*, Addison Wesley Professional Computing Series, 1994.
- M. Fowler, *Refactoring: Improving the Design of Existing Code*, Addison-Wesley, 1999
- I.J. Hayes (ed), *Specification Case Studies* 2nd ed, Prentice Hall
- S. Stepney, D. Cooper and J. Woodcock. An Electronic Purse. Oxford Univ Computing Lab Monograph PRG-126
- The CICS Application Programming Interface: Technical Reports, IBM Hursley.
- R. Barden, S. Stepney, D. Cooper. *Z in Practice*. Prentice Hall, 1994.
- Feng Wang, York MScSWE project, 2004 (available after November 2004).
- L. Bass, P. Clements, R. Kazman, *Software architecture in practice*, Addison Wesley, 1998

1.3 Argumentation and Argument Patterns (TPK)

- T P Kelly, J A McDermid, Safety Case Construction and Reuse using Patterns, In *Proceedings of 16th International Conference on Computer Safety, Reliability and Security (SAFECOMP97)*, September 1997, Springer-Verlag
  `http://www.cs.york.ac.uk/~tpk/pubs.htm`
- K. Cartmale, From Clouds to Concrete, 2001 (York MScSCSE Thesis available from Dept. Library)

- Gamma et al., *Design Patterns*, 1995, Addison-Wesley (Book available from University Library)
- S P Wilson, T P Kelly, J A McDermid, Safety Case Development: Current Practice, Future Prospects, in *Proceedings of 1st ENCRESS/12th CSR Workshop*, September 1995, Springer-Verlag
- T. E. Damer, *Attacking Faulty Reasoning: A Practical Guide to Fallacy Free Arguments*, Wadsworth, 2000
- T. Kelly, Arguing Safety A Systematic Approach to Safety Case Management, DPhil Thesis, YCST-99-05, Department of Computer Science, Univ. of York, 1998.
- N. Maiden, M. Cisse, H. Perez, D. Manuel, CREWS Validation Frames: Patterns for Validating System Requirements, CREWS Report 98-29, 1998.
  `http://citeseer.nj.nec.com/maiden98crews.html`

1.4 Real Time Execution (IJB)

- F. Mueller and J. Wegener, A comparison of static analysis and evolutionary testing for the verification of timing constraints. In *IEEE Real-Time Technology and Applications Symposium*, pages 179-188, June 1998.
- J. Wegener, H.-H. Sthamer, B. F. Jones, and D. E. Eyres. Testing real-time systems using genetic algorithms. *Software Quality Journal*, 6(2), pages127-135, 1997.
- N. Tracey, A Search-Based Test-Data Generation Framework for Safety-Critical Software, Department of Computer Science, University of York, DPhil Thesis, 2000.
- M. Nicholson, Selecting a Topology for Safety-Critical Real-Time Control Systems, DPhil Thesis YCST-98-08, Department of Computer Science, University of York, UK, 1998.
- P. Moscato, On Evolution, search, optimization, genetic algorithms and martial arts: Toward memetic algorithms, Caltech Concurrent Computation Program, California Institute of Technology, Pasadena , Tech Rep. 790, 1989.
  `http://www.densis.fee.unicamp.br/~moscato/papers/bigone.ps`

1.5 OO Modelling, UML, and Meta-modelling (RFP,FACP)

- K. Walden and J.-M. Nerson, *Seamless Object-Oriented Software Architecture*, Prentice-Hall, 1995. Available from RFP, and also as a PDF document from the authors.

- G. Booch, J. Rumbaugh, I. Jacobsen, *The UML Reference Guide*, Addison-Wesley, 1999.
- Documentation for the BON-CASE tool.
  Available at `http://www.cs.yorku.ca/~eiffel/`.
- The Argo/UML Tool documentation, (the BON CASE tool is constructed using the framework of Argo/UML).
  Available from `http://www.argouml.org`
- R. Paige, J. Ostroff, L. Kaminskaya, and J. Lancaric. BON-CASE: an Extensible CASE Tool for Formal Specification and Reasoning. *Journal of Object Technology* 1(5), 2002.
- G. Leavens et al. Preliminary Design of JML, Iowa State Technical Report, available from `http://www.cs.iastate.edu/~leavens/JML.html`
- The OMG. Meta-Object Facility Specification.
  Available at `http://www.omg.org`.
- R. Laleau and F. Polack, A Rigorous Metamodel for UML Static Conceptual Modelling of Information Systems, *International Conference on Advanced Information Systems Engineering, CAiSE2001* LNCS 2068, 2001, pp402-416

1.6 Altruistic and Adaptive Agents (DK,DLK)

- W. D. Hamilton. The genetic evolution of social behaviour. The *Journal of Theoretical Biology*, 7, 1-16, 1964.
- J. Barton. Kinship-Driven Altruism in Multi-Agent Systems. Third year project. CS Dept. Univ. of York. 2000.
- H. Turner and D. Kazakov. Stochastic simulation of kinship-driven altruism. *AISB Journal*, 1(2), 2002.
- D. Kazakov and M. Bartlett. Evolution of language in a multi-agent environment. *IS conference*, Ljubljana, Slovenia, 2002.
- X. Wang and T. Sandholm: *Reinforcement Learning to Play an Optimal Nash Equilibrium in Team Markov Games*. NIPS 2002.
- S. Kapetanakis and D. Kudenko: Reinforcement Learning of Coordination in Cooperative Multi-Agent Systems. *AAAI* 2002. This paper gives an introduction to cooperative games.
- L. Peshkin, Kee-Eung Kim, N. Meuleau, and L. Kaelbling: Learning to Cooperate via Policy Search. *AAAI* 2000.

1.7 Image Recognition and Comparison (DLK, RCW)

- Caudill, M.; Butler, C. *Understanding Neural Networks: Computer Explorations; Volume 1: Basic Networks*; The MIT Press; Cambridge, Massachusetts, 1992.
- Caudill, M.; Butler, C. *Understanding Neural Networks: Computer Explorations; Volume 2: Advanced Networks*; The MIT Press; Cambridge, Massachusetts, 1992.
- Biometric authentication, *International ECCV 2002 Workshop*, Copenhagen, Denmark, June 1, 2002 : proceedings Massimo Tistarelli, Josef Bigun, Anil K. Jain (eds.). LNCS 2359 Springer 2002
- M. Turk and A. Pentland. Eigenfaces for recognition. *Journal of Neuroscience*, 3(1):71–86, 1991

1.8 Shape from Shading, Texture etc (ERH)

- P.L. Worthington and E.R. Hancock, Surface Topography using Shape-from-shading, *Pattern Recognition*, 34, pp. 823-840, 2001.
- P. L Worthington and Edwin R Hancock, New Constraints on Data-Closeness and Needle Map Consistency for Shape-from-Shaping, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, IEEE Computer Society Press, vol. 21, no. 12, pp 1250-1267. , 1999.
- P.L.Worthington, E.R.Hancock, Needle Map Recovery using Robust Regularizers, *Image and Vision Computing* 32, pp. 1255-1271, 1999.
- P.L.Worthington and E.R.Hancock, Object Recognition using Shape-from-shading, *IEEE PAMI*, 23, 535542, 2001.
- K.N. Choi, P.L.Worthington and E.R.Hancock, Estimating Facial Pose using Shape-form-shading, *Pattern Recognition Letters*, 23, 5, 2002.
- E. Ribeiro and E.R.Hancock, Shape-form-Texture using Eigenvectors of Spectral Distortion, *The Mathematics of Surfaces IX*, Edited by R.Cipolla and R.Matrin, Springer, pp 194-213, 2000.
- E.Ribeiro and E.R. Hancock, Detecting Multiple Texture Planes using Local Spectral Distortion, *Proceedings of the 11th British Machine Vision Conference*, Vol 1, pp 102-111, 2000.
- E.Ribeiro and E.R.Hancock, Perspective Pose from Spectral Voting, *IEEE Computer Society Conference on Computer Vision and Pattern Recognition*, IEEE Computer Society Press, Vol.I, pp. 656-662, 2000.
- E. Ribeiro and E.R. Hancock, Improved Orientation Estimation for Texture Planes using Multiple Vanishing Points, *Pattern Recognition*, 33, pp 1599-1610, 2000.

- E. Ribeiro and E.R. Hancock, Estimating the 3-D Orientation of texture planes using local spectral analysis, *Image and Vision Computing*, 18, 619–631, 2000.

- E. Ribeiro and E.R. Hancock, Shape From Periodic Texture using the Eigenvectors of Local Affine Distortion, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 23, pp. 1459–1465, 2001 , 2001.

1.9 Databases Design and Testing (FACP)

- R. P. Whittington, *Database Systems Engineering*, 1988 (in University Library).

- S. Damianakis, MScSWE project, 2004 (available from November 2004)

- S-Y. Huang, MScIP project, 2003

- C. Nolan, MScIP project, 2000

- R. A. Davies, R. J. A. Beynon and B. F. Jones, Automating the Testing of Databases, *First International Workshop on Automated Program Analysis, Testing and Verification*, co-located with ICSE2000, Limerick, Ireland,
`http://ase.arc.nasa.gov/icse2000/`

- D. Chays, S. Dan, P. G. Frankl, F. I. Vokolos and E. J. Weyuker, A Framework for Testing Database Applications, *Proceedings, International Symposium on Software Testing and Analysis, ISSTA2000*, Portland, Oregon, August 2000, ACM

1.10 Simulating Complex (Biological) Systems (SS,DLK,JAC,JLJ)

- Goldberg. *Genetic Algorithms*. 1989.

- T. Mitchell. *Machine Learning*. 1997;
slides available at `http://www.cs.cmu.edu/~tom/mlbook-chapter-slides.html`

- Michael Pendrich's 2003-04 project report

- Przemyslaw Prusinkiewicz and Aristid Lindenmayer, *The Algorithmic Beauty of Plants*, Springer-Verlag, 1996.

- Terry R. J. Bossomaier and David G. Green eds, *Complex Systems*, 2000, Cambridge University Press.

- Corne, Dorigo, Glover, eds. *New Ideas in Optimization*. McGraw Hill. 1999

- Fractal Music Lab, and other fractal music web sites

- P. J. Bentley, D. W. Corne, editors. Part II of *Creative Evolutionary Systems*. Morgan Kaufmann. 2002
- Berlekamp, Conway, Guy. *Winning Ways for Your Mathematical Plays Volume 2: games in particular*. Chapter 25. Academic Press. 1982
- Andrew Adamatzky, editor. *Collision-Based Computing*. Springer. 2002
- Stephen Wolfram. *Cellular Automata and Complexity: collected papers*. Addison-Wesley. 1994
- John Holland. *Emergence*. OUP. 1998
- Bentley, Corne (eds). *Creative Evolutionary Systems*. Morgan Kaufmann. 2002
- Koza, *Genetic Programming*. Vol 1.

1.11 Proof and Spark Ada (SK)

- John Barnes, *High Integrity Ada: The SPARK Approach*, Addison-Wesley, 1997, ISBN 0-201-17517-7.
- Rod Chapman, Improving support for Fixed-Point types in SPARK. Praxis Critical Systems. S.P0468.44.17, Issue 0.2, 1st February 2000. [Available from SK]
- Harrison: *Theorem Proving with the Real Numbers*. Springer. 1996
- Praxis Critical Systems. Generation of VCs for SPARK Programs.
- Praxis Critical Systems. SPADE Simplifier User Manual.
- PVS: `http://pvs.csl.sri.com/` has a vast amount of PVS information, including *A Tutorial Introduction to PVS and PVS: An Experience Report*, which is a collection of application examples.

1.12 Novel Attacks on Secure Systems (JAC,SS)

- Kocher, *Timing Attacks on Implementations*
- Kocher, *Differential Power Analysis*
- Chari, Jutla, Rao, Rohatgi. Power analysis: attacks and countermeasures. In Annabelle McIver, Carroll Morgan, editors. *Programming Methodology*. Springer. 2003
- Jones, Gomard, Sestoft. *Partial Evaluation and Automatic Program Generation*. Prentice-Hall. 1993

1.13 Visualisation and Visual Programming (SS,RCW)

- S. Stepney. Pictorial Representation of Parallel Programs. In A. Kilgour and R. Earnshaw, editors, *Graphical Tools for Software Engineering*. CUP, 1989.
- S. Stepney. Understanding Multi-transputer Execution. IT UK 88, 1988.
- S. Stepney. GRAIL: Graphical Representation of Activity, Interconnection and Loading. In T. Muntean, editor, *7th Technical meeting of the Occam User Group*. IOS Amsterdam, 1987.
- Shi-Kuo Chang(Ed), *Principles of visual programming systems*, Prentice-Hall International, 1990
- Nan C. Shu, *Visual programming*, New York, Van Nostrand Reinhold 1988
- `http://www.khoral.com/khoros/cantata/`
- `http://www.aai.com/AAI/KBV/KBVPE.html`

1.14 Abstract Machines Designed to Match Programming Languages (CR)

- P. J. Landin,, The mechanical evaluation of expression, *Computer Journal*, 6(4), pp308-320, 1964.
- R. E. Berry, Experience with the Pascal-P Compiler, *Software – Practice and Experience*, 8, pp617-627, 1978.
- T. Johnsson, Efficient Compilation of Lazy Evaluation, Proceedings of the ACM SIGPLAN'84 Symposium on Compiler Construction, *SIGPLAN Notices*, 19(6), pp58-69, 1984.
- P. van Roy, *1983-1993 The Wonder Years of Sequential Prolog Implementation*, Digital, 1994.
  `ftp://ftp.digital.com/pub/DEC/PRL/research-reports/PRL-RR-36.ps.Z`
- T. Lindholm and F. Yellin, *The Java Virtual Machine Specification*, Sun Microsystems, 1999.
  `http://java.sun.com/docs/books/vmspec/`
- E. Meijer and J. Gough, *Technical Overview of the Common Language Runtime*, Microsoft, 2001.
  `http://research.microsoft.com/~meijer/Papers/CLR.pdf`

1.15 Graphs, Clustering (ERH), Reduction and Rewriting (CR,DP)

- A Webb. *Statistical Pattern Recognition*, Arnold. A Torsello i and E.R.Hancock , Shape-space from tree unions, *ECCV 2002.*.
- K. Naylor, Machine-Generated Diagrams of Graph Reduction, Final Year Project Dissertation, Department of Computer Science, University of York, 2001.
- J.C. Martin: *Introduction to Languages and the Theory of Computation.* Third edition, McGraw-Hill, 2002.
- T.A. Sudkamp: *Languages and Machines.* Second edition, Addison-Wesley, 1998.
- J.E. Hopcroft, R. Motwani and J.D. Ullman: *Introduction to Automata Theory, Languages, and Computation.* Second edition, Addison-Wesley, 2001.
- G. Rozenberg (ed.): *Handbook of Graph Grammars and Computing by Graph Transformation.* Volume 1: Foundations. World Scientific, 1997.
- H. Ehrig, G. Engels, H.-J. Kreowski and G. Rozenberg (eds.): *Handbook of Graph Grammars and Computing by Graph Transformation.* Volume 2: Applications, Languages, and Tools. World Scientific, 1999.
  - Chapter 13: A. Schörr, A.J. Winter and A. Zündorf: The PROGRES Approach: Language and Environment, pages 487-550.
  - Chapter 14: C. Ermel, M. Rudolf and G. Taentzer: The AGG Approach: Language and Environment, pages 551-604.
- M. Andries, G. Engels, A. Habel, B. Hoffmann, H.-J. Kreowski, S. Kuske, D. Plump, A. Schörr and G. Taentzer: Graph Transformation for Specification and Programming. *Science of Computer Programming* 34(1):1-54, 1999.
- D. Plump: Hypergraph Rewriting: Critical Pairs and Undecidability of Confluence. In eds. M.R. Sleep, M.J. Plasmeijer and M.C.J.D. van Eekelen. *Term Graph Rewriting: Theory and Practice*, chapter 15, pages 201-213, John Wiley, 1993.
- A. Habel, J. Müller and D. Plump: Double-Pushout Graph Transformation Revisited. *Mathematical Structures in Computer Science* 11:637-688, 2001.
- A. Habel and D. Plump: Computational Completeness of Programming Languages Based on Graph Transformation. In *Proc. Foundations of Software Science and Computation Structures (FOSSACS 2001)*, volume 2030 of Lecture Notes in Computer Science, pages 230-245. Springer-Verlag, 2001.

- A. Habel and D. Plump: A Core Language for Graph Transformation (Extended Abstract). In *Proc. Workshop on Applied Graph Transformation (AGT 2002)*, pages 187-199, 2002.
- S. Willoughby: Visualising Hierarchical Hypergraphs: An Editor. Third year project report, University of York, 2002.
- A. Granger: An Experimental System for Term Graph Rewriting. Third year project report, University of York, 2002.
- D. Plump: Simplification Orders for Term Graph Rewriting. In *Proc. Mathematical Foundations of Computer Science*, volume 1295 of Lecture Notes in Computer Science, pages 458-467. Springer-Verlag, 1997.
- D. Plump: Critical Pairs in Term Graph Rewriting. In *Proc. Mathematical Foundations of Computer Science*, volume 841 of Lecture Notes in Computer Science, pages 556-566. Springer-Verlag, 1994.
- F. Baader and T. Nipkow: *Term Rewriting and All That.* Cambridge University Press, 1998.
- J. W. Klop: Term Rewriting Systems. Chapter 1 in S. Abramsky, D. M. Gabbay, and T. S. E. Maibaum (eds.), *Handbook of Logic in Computer Science*, volume 2, pages 1-117. Oxford University Press, 1992.
- G. Di Battista, P. Eades, R. Tamassia and I.G. Tollis: *Graph Drawing.* Prentice-Hall, 1999.
- M. Kaufmann and D. Wagner: *Drawing Graphs.* Volume 2025 of Lecture Notes in Computer Science, Springer-Verlag, 2001.
- R. Tamassia's web pages on graph drawing, including an annotated bibliography and a tutorial.

1.16 Quantum Computing and Quantum Information Theory (SLB,SOK,JAC,ERH,RCW,SS)

- Scott H. Clearwater, *Ultimate Zero and One.*
- Williams and Clearwater, *Explorations in Quantum Computing.*
- M. Nielsen and I Chuang, *Quantum Computation and Quantum Information*, Cambridge University Press.
- Grover, "Quantum Mechanics helps in searching for a needle in a haystack", `http://uk.arxiv.org/abs/quant-ph/quant-ph/9706033`
- Shor, "Introduction to Quantum Algorithms", `http://uk.arxiv.org/abs/quant-ph/quant-ph/0005003`

- QuiDDs: Viamontes et al, "Gate-Level Simulation of Quantum Circuits", http://uk.arxiv.org/abs/quant-ph/quant-ph/0208003
- Rieffel, Polak, "An Introduction to Quantum Computing for Non-Physicists", http://uk.arxiv.org/abs/quant-ph/quant-ph/9809016
- P. Emberson, An Introduction To Quantum Algorithm Design, University of York 4th year Project, March 2002
- Gennady P. Berman et al, *Introduction to quantum computers*, London, etc., World Scientific, 1998.
- http://www.qubit.org/
- http://tph.tuwien.ac.at/~oemer/qcl.html

1.17 AURA (High-Performance Pattern Matching Systems) Applications (JA,SOK)

- J Austin, AURA, A Distributed Associative Memory for High Speed Symbolic Reasoning, *Connectionist Symbolic Integration*, Ed, Ron Sun, Kluwer, 1996
- http://www.cs.york.ac.uk/arch/neural/research/aura/
- http://www.cis.hut.fi/projects/somtoolbox/theory/somalgorithm.shtml
- Kohonen, T. Self-Organizing Maps. *Series in Information Sciences*, Vol. 30. Springer, Heidelberg. 1995.
- Luttrell, S. P. (1989). *Hierarchical vector quantization*. IEE Proceedings, 136:405-413.
- Buntine, W., Learning Classification Trees, *Statistics and Computing*, vol 2, 1992, pp63-73.
- J Austin, S Buckle, Segmentation and Matching in Infra-Red Airborne Images using a Binary Neural Network, *Neural Networks*, Chapter 8, pp. 95-118, Ed, J Taylor, Alfred Waller
- J Austin, High Speed Image Segmentation Using a Binary Neural Network , *Neurocomputation in Remote Sensing Data*, Ed. Kanellopoulos, Wilkinson, Austin, Roli, publ. Springer, 1997

1.18 Vision and Pattern Recognition - robots (NEP)

- Jain, Kasturi and Shunk, *Machine Vision*, McGraw-Hill 1995. Sonka, Hlavac and Boyle: *Image Processing, Analysis and Machine Vision*, Chapman and Hall, 1993.
- Rangachar Kasturi, *Computer vision: principles*, 1991. (library shelfmark: SK 75 KAS)
- Bernard Buxton, Computer vision: *ECCV '96: 4th European Conference on Computer Vision*, Cambridge, UK, April 15-18, 1996: proceedings; SK [LECT Vol. 1064,1065] periodical.
- Hartley and Zisserman. *Multiple View Geometry in Computer Vision.* Cambridge Press 2000. (Advanced, i.e. Graduate Text).
- Forsyth and Ponce. *Computer Vision: A modern approach.*Prentice Hall 2003.

1.19 Modern Stack Processing (CB)

- Phil Koopman, *Stack Computers.*
- Various research papers and thesis are also available on Chris Bailey's web-pages.

1.20 Concurrent Programming Translations and Comparisons (AJW)

- G.R. Andrews, The Distributed Programming Language SR - Mechanisms, Design and Implementation, *Software Practice and Experience*, 12(8), pp 719-754, August 1982
- G.R. Andrews and R.A. Olsson, *The SR Programming Language - Concurrency in Practice*, Benjamin/Cummings, 1993
- Ada 95 Reference Manual, Intermetrics, ANSI/ISO/IEC-8652:1995, 1995
- O. P. Kiddle and A. J. Wellings, Extended Protected Types in Ada-EPT, *Proceedings of ACM SIGAda Annual International Conference (SIGAda 98)*, pp 229-239 November 1998 (also available as a Departmental Technical Report YCS299, Department of Computer Science, University of York, UK)
- H. Parker, 3rd Year Project Report (2001)

1.21 Real Time Java (AJW)

- Real Time Specification for Java, 1999, The Real-Time for Java Experts Group
- Toba: A Java-to-C Translator, University of Arizona, US,
- Andrew White, Toba, 3rd Year Project Report, 2002
- MaRTE OS, Minimal Real-Time Systems for Embedded Applications, `http://ctrpc17.ctr.unican.es/marte.html.`
- The Ravenscar Profile, `http://cs.york.ac.uk/~burns/ravenscar.ps`
- G. Bollella et al, The Real-Time Specification for Java, see `http://www.rtj.org`.
- B. Venners, *Inside the Java 1.2 Virtual Machine*, Osborne McGraw-Hill, 1999.

1.22 Robot Soccer (DK)

- Gerhard Weiss: *Multi-Agent Systems*. Chapter 1. MIT Press, 1999. This chapter introduces agent architectures and gives a good overview on reactive agents.
- Tom Mitchell: *Machine Learning*. Chapter 13. Kluwer 1998. This chapter gives a very nice introduction to reinforcement learning.
- Peter Stone and Manuela Veloso: Task Decomposition, Dynamic Role Assignment, and Low-Bandwidth Communication for Real-Time Strategic Teamwork. *Artificial Intelligence* 110:2, 1999

1.23 Turing Machine Simulation (DP)

- A. Turing: On computable numbers, with an application to the Entscheidungsproblem. *Proceedings of the London Mathematical Society (Second Series)* 42:230-265, 1936/37. Correction ibid. 43:544-546, 1937.
- J.C. Martin: *Introduction to Languages and the Theory of Computation*. Third edition, McGraw-Hill, 2002.
- T.A. Sudkamp: *Languages and Machines*. Second edition, Addison-Wesley, 1998.
- J.E. Hopcroft, R. Motwani and J.D. Ullman: *Introduction to Automata Theory, Languages, and Computation*. Second edition, Addison-Wesley, 2001.
- G. Eames: Animation of Turing machines. Third-year project report, Department of Computer Science, The University of York, 2003.

1.24 Pointers and Graphs (DP)

- EPSRC project, Safe Pointers by Graph Transformation.
- G. Di Battista, P. Eades, R. Tamassia and I.G. Tollis: *Graph Drawing*. Prentice-Hall, 1999.
- Roberto Tamassia's web page on graph drawing, including an annotated bibliography and a tutorial.
- Frank Drewes' web page on typesetting graphs in LaTeX.
- A. Bakewell, D. Plump and C. Runciman: Checking the Shape Safety of Pointer Manipulations (Extended Abstract). Submitted for publication.

1.25 Ethical Issues of Computer Engineering (SS,FACP)

This topic is not based on past project suggestions.

- Deborah Johnson, *Computer Ethics*, Prentice Hall, 2000
- J. Holt, J. Newton, *A Manager's Guide to IT Law*, BCS, 2004
- web clearing house for engineering and computing ethics:
  `http://www4.ncsu.edu/~jherkert/ethicind.html`
- Ethics in Computing:
  `http://www2.ncsu.edu/eos/info/computer_ethics`
- Australian Institute of Computer Ethics:
  `http://www.aice.net`
- Computer ethics issue of Ethics and Politics:
  `http://www.univ.trieste.it/~dipfilo/etica_e_politica/1999_2/`
- On-line Ethics centre:
  `http://onlineethics.org/`
- Donald Mackenzie, Science and Public Policy vol 21(4), August 1994
- R. Anderson, *Security Engineering*, Wiley
- ACM/IEEE Code of Ethics:
  `http://www.acm.org/serving/se/code.htm`
- L. R. WEINER, *Digital Woes*, Addison Wesley, 1993.
- P. NEUMANN, *Computer Related Risks*, Addison Wesley, 1995.
- S. FLOWERS, *Software Failure*, Management Failure, Wiley, 1996.