Evolutionary Computing

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Course URL: http://www.cs.vu.nl/~gusz/eas-eng.html

Evolutionary Computing

- Course duration is 13 weeks,
  - week 1-12: lectures,
  - week 13: consultation/questions
- Course is worth 4 credit points:
  - lecture part: 3 credit points
  - programming assignment: 1 credit point (compulsory!)
- Examination:
  - written exam on lecture part: mark M
  - programming assignment evaluation: mark P
  - final mark: F = (3M+P)/4

Evolutionary Computing

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Evolutionary Computing

MAIN:
all "dialects" within evolutionary computing: genetic algorithms, evolution strategies, evolutionary programming, genetic programming, and classifier systems

SPECIFIC SUBJECTS:
various genetic structures (representations), selection techniques, sexual and asexual genetic operators, (self-)adaptivity

APPLICATIONS:
optimisation, constraint handling and machine learning

OUTLOOK:
Artificial Life and Artificial Societies, Evolutionary Economy, Evolutionary Art

Information on EC

Books:

– T. Bäck, *Evolutionary Algorithms in Theory and Practice: Evolution Strategies, Evolutionary Programming, Genetic Algorithms*, Oxford University Press, 1996.
– T. Bäck, D.B. Fogel, Z. Michalewicz, *Evolutionary Computation, vol 1 & 2*, IOP Publishing, Bristol UK, 2000, ISBN 0 7503 0664 5, 0 7503 0665 3.
– Z. Michalewicz, *Genetic Algorithms + Data Structures = Evolution Programs*, Springer, 1996, 3nd edition.

Web:

– EvoNet's Flying Circus: http://evonet.dcs.napier.ac.uk/evoweb/resources/flying_circus/index.html
– The Hitch-Hiker's Guide to Evolutionary Computation http://www.cs.bham.ac.uk/Mirrors/ftp.de.uu.net/EC/clife/www/
– comp.ai.genetic newsgroup