An Indexed Bibliography of Genetic Algorithms in the Mediterranean

compiled by

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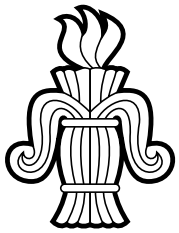

DRAFT September 8, 1996

available via anonymous ftp: site ftp.uwasa.fi directory cs/report94-1 file gaMEDITERbib.ps.Z

Trademarks

Warning

While this bibliography has been compiled with the utmost care, the editor takes no responsibility for any errors, missing information, the contents or quality of the references, nor for the usefulness and/or the consequences of their application. The fact that a reference is included in this publication does not imply a recommendation. The use of any of the methods in the references is entirely at the user's own responsibility. Especially the above warning applies to those references that are marked by trailing †(or *), which are the ones that the editor has unfortunately not had the opportunity to read. An abstract was available of the references marked with *.

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Chapter 1

Preface

> "Living organism are consummate problem solvers.
> They exhibit a versatility that puts the best computer
> programs to shame."
>
> *John H. Holland* [1]

The material of this bibliography has been extracted from the genetic algorithm bibliography [2], which when this report was compiled contained 6478 items and which has been collected from several sources of genetic algorithm literature including Usenet newsgroup `comp.ai.genetic` and the bibliographies [3, 4, 5, 6]. The following index periodicals have been used systematically

- ACM: *ACM Guide to Computing Literature:* 1979 – 1993/4
- CA: *Computer Abstracts:* Jan. 1993 – Feb. 1995
- CCA: *Computer & Control Abstracts:* Jan. 1992 – Mar. 1996 (except May -95)
- CTI: *Current Technology Index* Jan./Feb. 1993 – Jan./Feb. 1994
- DAI: *Dissertation Abstracts International:* Vol. 53 No. 1 – Vol. 56 No. 10 (Apr. 1996)
- EEA: *Electrical & Electronics Abstracts:* Jan. 1991 – Mar. 1996
- P: *Index to Scientific & Technical Proceedings:* Jan. 1986 – Mar. 1996 (except Nov. 1994)
- A: *International Aerospace Abstracts:* Jan. 1995 – May 1995
- N: *Scientific and Technical Aerospace Reports:* Jan. 1993 - Dec. 1995 (except Oct. 1995)
- EI A: *The Engineering Index Annual:* 1987 – 1992
- EI M: *The Engineering Index Monthly:* Jan. 1993 – Mar. 1996

1.1 Your contributions erroneous or missing?

This bibliography is updated on a regular basis and certainly contains many errors and inconsistences. The editor would be glad to hear from any reader who notices any errors, missing information, articles etc. In the future a more complete version of this bibliography will be prepared for the genetic algorithms in the Mediterranean research community and others who are interested in this rapidly growing area of genetic algorithms.

When submitting updates to the database, paper copies of already published contributions are preferred. Paper copies (or `ftp` ones) are needed mainly for indexing. We are also doing reviews of different aspects and applications of GAs where we need as complete as possible collection of GA papers. Please, do not forget to include complete bibliographical information: copy also proceedings volume title pages, journal table of contents pages, etc. Observe that there exists several versions of each subbibliography, therefore **the reference numbers are not unique and should not be used alone in communication**, use author, title, and year instead.

Complete bibliographical information is really helpful for those who want to find your contribution in their libraries. If your paper was worth writing and publishing it is certainly worth to be referenced right in a bibliographical database read daily by GA researchers, both newcomers and established ones.

For further instructions and information see `ftp.uwasa.fi/cs/GAbib/README`.

1.1.1 How to cite this report?

The complete BiBTEX record for this report is shown below:

```
@TECHREPORT{gaMEDITERbib,
     KEY = "MEDITER",
     ANNOTE = "*on,*FIN,bibliography /special",
     AUTHOR = "Jarmo T. Alander",
     TITLE = "Indexed Bibliography of Genetic Algorithms in the {Mediterranean}",
     INSTITUTION = "University of Vaasa, Department of Information Technology and Production Economics",
     TYPE = "Report",
     NUMBER = "94-1-MEDITER",
     NOTE = "(\ftp{ftp.uwasa.fi}{cs/report94-1}{gaMEDITERbib.ps.Z})",
     YEAR = 1995
}
```

You can also use the BiBTEX file `GASUB.bib`, which is available in our ftp site `ftp.uwasa.fi` in directory `cs/report94-1` and contains records for all GA subbibliographies.

1.2 How to get this report via Internet?

Versions of this bibliography are available via anonymous `ftp` and `www` from the following sites:

media	*country*	*site*	*directory*	*file*
`ftp`	Finland	`ftp.uwasa.fi`	`/cs/report94-1`	`gaMEDITERbib.ps.Z`
`www`	Finland	`http://www.cs.hut.fi`	`~ja/gaMEDITERbib`	`gaMEDITERbib.html`

Observe that these versions may be somewhat different and perhaps reduced as compared to this volume that you are now reading. Due to technical problems in transforming LATEXdocuments into `html` ones the `www` versions contain usually less information than the corresponding `ftp` ones. It is also possible that the `www` version is completely unreachable.

The directory also contains some other indexed GA bibliographies shown in table 1.1.

1.3 Acknowledgement

The editor wants to acknowledge all who have kindly supplied references, papers and other information on genetic algorithms in the Mediterranean literature. At least the following GA researchers have already kindly supplied their complete autobibliographies and/or proofread references to their papers: Dan Adler, Patrick Argos, Jarmo T. Alander, James E. Baker, Wolfgang Banzhaf, Christian Bierwirth, Joachim Born, Ralf Bruns, I. L. Bukatova, Thomas Bäck, Yuval Davidor, Dipankar Dasgupta, Marco Dorigo, J. Wayland Eheart, Bogdan Filipič, Terence C. Fogarty, David B. Fogel, Toshio Fukuda, Hugo de Garis, Robert C. Glen, David E. Goldberg, Martina Gorges-Schleuter, Hitoshi Hemmi, Jeffrey Horn, Aristides T. Hatjimihail, Mark J. Jakiela, Richard S. Judson, Akihiko Konagaya, Aaron Konstam, John R. Koza, Kristinn Kristinsson, D. P. Kwok, Gregory Levitin, Carlos B. Lucasius, Michael de la Maza, John R. McDonnell, J. J. Merelo, Laurence D. Merkle, Zbigniew Michalewics, Melanie Mitchell, David J. Nettleton, Volker Nissen, Ostrowski Tomasz, Kihong Park, Nicholas J. Radcliffe, Colin R. Reeves, David Rogers, Ivan Santibáñez-Koref, Marc Schoenauer, Markus Schwehm, Hans-Paul Schwefel, Michael T. Semertzidis, William M. Spears, Donald S. Szarkowicz, El-Ghazali Talbi, Leigh Tesfatsion, Peter M. Todd, Marco Tomassini, Andrew L. Tuson, Jari Vaario, Gilles Venturini, Hans-Michael Voigt, Roger L. Wainwright, D. Eric Walters, Steward W. Wilson, Xin Yao, and Xiaodong Yin.

The editor also wants to acknowledge Elizabeth Heap-Talvela for her kind proofreading of the manuscript of this bibliography.

file	*contents*
`ga94bib.ps.Z`	GA in 1994
`ga95bib.ps.Z`	GA in 1995
`ga96bib.ps.Z`	GA in 1996
`gaAIbib.ps.Z`	GA in artificial intelligence
`gaALIFEbib.ps.Z`	GA in artificial life
`gaARTbib.ps.Z`	GA in art and music
`gaAUSbib.ps.Z`	GA in Australia
`gaBASICSbib.ps.Z`	Basics of GA
`gaBIObib.ps.Z`	GA in biosciences including medicine
`gaCADbib.ps.Z`	GA in Computer Aided Design
`gaCHEMPHYSbib.ps.Z`	GA in chemistry and physics
`gaCONTROLbib.ps.Z`	GA in control
`gaCSbib.ps.Z`	GA in computer science (incl. databases and GP)
`gaDBbib.ps.Z`	GA in databases
`gaECObib.ps.Z`	GA in economics and finance
`gaENGbib.ps.Z`	GA in engineering
`gaESbib.ps.Z`	Evolution strategies
`gaFAR-EASTbib.ps.Z`	GA in the Far East (Japan etc)
`gaFRAbib.ps.Z`	GA in France
`gaFTPbib.ps.Z`	GA papers available via ftp
`gaFUZZYbib.ps.Z`	GA and fuzzy logic
`gaGERbib.ps.Z`	GA in Germany (and DDR)
`gaGPbib.ps.Z`	genetic programming
`gaIMPLEbib.ps.Z`	implementations of GA
`gaLOGISTICSbib.ps.Z`	GA in logistics
`gaMANUbib.ps.Z`	GA in manufacturing
`gaMEDITERbib.ps.Z`	GA in the Mediterranean
`gaNNbib.ps.Z`	GA in neural networks
`gaNORDICbib.ps.Z`	GA in Nordic countries
`gaOPTIMIbib.ps.Z`	GA and optimization (only a few refs)
`gaORbib.ps.Z`	GA in operations research
`gaPARAbib.ps.Z`	Parallel and distributed GA
`gaPOWERbib.ps.Z`	GA in power engineering
`gaPROTEINbib.ps.Z`	GA in protein research
`gaROBOTbib.ps.Z`	GA in robotics
`gaSAbib.ps.Z`	GA and simulated annealing
`gaSIGNALbib.ps.Z`	GA in signal and image processing
`gaTHEORYbib.ps.Z`	Theory and analysis of GA
`gaTOP10bib.ps.Z`	Authors having at least 10 GA papers
`gaUKbib.ps.Z`	GA in United Kingdom
`gaVLSIbib.ps.Z`	GA in VLSI design and testing

Table 1.1: Other indexed GA subbibliographies.

Chapter 2

Introduction

The table 2.1 gives the queries that have been used to extract this bibliography. The query system as well as the indexing tools used to compile this report from the BiBTEX-database [7] have been implemented by the author mainly as sets of simple `awk` programs [8].

string	*field*	*class*
`in Italian`	`NOTE`	GAs in Italian
`*ITA`	`ANNOTE`	GAs in Italy
`*ESP`	`ANNOTE`	GAs in Spain
`*POR`	`ANNOTE`	GAs in Portugal
`*GRE`	`ANNOTE`	GAs in Greece
`*ISR`	`ANNOTE`	GAs in Israel
`*TUR`	`ANNOTE`	GAs in Turkey
`*CYP`	`ANNOTE`	GAs in Cyprus
`*SLOVE`	`ANNOTE`	GAs in Slovenia
`*CRO`	`ANNOTE`	GAs in Croatia
`*ROM`	`ANNOTE`	GAs in Romania
`*LYB`	`ANNOTE`	GAs in Lybanon

Table 2.1: Queries used to extract this subbibliography from the main one.

Chapter 3

Statistical summaries

This chapter gives some general statistical summaries of genetic algorithms in the Mediterranean literature. More detailed indexes can be found in the next chapter.

References to each class (c.f table 2.1) are listed below:

- **GAs in Croatia** 5 references ([9]-[13])
- **GAs in Cyprus** 3 references ([14]-[16])
- **GAs in Greece** 18 references ([17]-[34])
- **GAs in Israel** 34 references ([35]-[68])
- **GAs in Italy** 147 references ([69]-[215])
- **GAs in Portugal** 11 references ([216]-[226])
- **GAs in Romania** 9 references ([227]-[235])
- **GAs in Slovenia** 17 references ([236]-[252])
- **GAs in Spain** 44 references ([253]-[296])
- **GAs in Turkey** 10 references ([297]-[306])

Observe that each reference is included (by the computer) only to one class (see also the queries for classification in table 2.1).

3.1 Publication type

This bibliography contains published contributions including reports and patents. All unpublished manuscripts have been omitted unless accepted for publication. In addition theses, PhD, MSc etc., are also included whether or not published somewhere.

Table 3.1 gives the distribution of publication type of the whole bibliography. Observe that the number of journal articles may also include articles published or to be published in unknown forums.

type	*number of items*
book	1
part of a collection	6
journal article	70
proceedings article	185
report	30
PhD thesis	3
MSc thesis	2
others	1
total	298

Table 3.1: Distribution of publication type.

3.2 Annual distribution

Table 3.2 gives the number of genetic algorithms in the Mediterranean papers published annually. The annual distribution is also shown in fig. 3.1. The average annual growth of GA papers has been approximately 40 % during almost the last twenty years.

year	*items*	*year*	*items*
1989	4	1990	10
1991	21	1992	29
1993	47	1994	72
1995	96	1996	19
total			298

Table 3.2: Annual distribution of contributions.

3.3 Classification

Every bibliography item has been given at least one describing keyword or classification by the editor of this bibliography. Keywords occurring most are shown in table 3.3.

engineering	47
neural networks	35
parallel GA	25
robotics	20
machine learning	18
control	17
optimization	12
scheduling	11
comparison	11
hybrid	10
review	8
implementation	7
economics	7
CAD	7
fuzzy sets	6
filters	6
crossover	6
controllers	6
classifiers	6
telecommunications	5
signal processing	5
population size	5
medicine	5
fuzzy systems	5
analysing GA	5
QAP	5
others	526

Table 3.3: The most popular subjects.

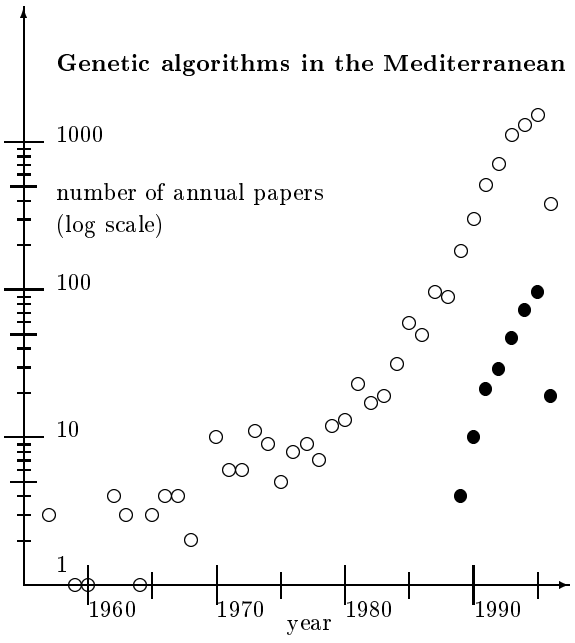

Figure 3.1: The number of papers applying **genetic algorithms in the Mediterranean** (•) ∘ = total GA papers. Observe that the last two years are most incomplete in the database.

3.4 Authors

Table 3.4 gives the most productive authors.

total number of authors	421
Dorigo, Marco	34
Davidor, Yuval	21
Maniezzo, Vittorio	19
Colorni, Alberto	11
Filipič, Bogdan	8
Petridis, V.	8
Parisi, Domenico	7
Tarantino, E.	7
Aldana Montes, José Francisco	6
Herrera, F.	6
Lozano, M.	6
Miranda, V.	6
Proenca, Luis Miguel	6
Tettamanzi, Andrea	6
Verdegay, J. L.	6
Hatjimihail, Aristides T.	5
14 authors	4
26 authors	3
60 authors	2
304 authors	1

Table 3.4: The most productive genetic algorithms in the Mediterranean authors.

3.5 Geographical distribution

The following table gives the geographical distribution of authors, when the country of the author was known. Over 80% of the references of the main database are classified by country.

Total	298
Italy	147
Spain	44
Israel	34
Greece	19
Slovenia	17
Portugal	11
Turkey	10
Romania	9
Croatia	6
Cyprus	3
Holland	3
United Kingdom	3
Japan	2
United States	2
Austria	1
Canada	1
Czech Republic	1
Denmark	1
Singapore	1
Switzerland	1
Venezuela	1
Unknown country	-19

Table 3.5: The geographical distribution of authors.

3.6 Conclusions and future

The editor believes that this bibliography contains references to most genetic algorithms in the Mediterranean contributions upto and including the year 1995 and the editor hopes that this bibliography could give some help to those who are working or planning to work in this rapidly growing area of genetic algorithms.

Chapter 4

Indexes

4.1 Books

The following list contains all items classified as books.

4.2 Journal articles

The following list contains the references to every journal article included in this bibliography. The list is arranged in alphabetical order by the name of the journal.

total 71 articles in 58 journals

4.3 Theses

The following two lists contain theses, first PhD theses and then Master's etc. theses, arranged in alphabetical order by the name of the school.

4.3.1 PhD theses

Imperial College for Science, [48]
Politechnico di Milano, [187]
Universidad Politécnica de Madrid, [255]

total 3 thesis in 3 schools

4.3.2 Master's theses

This list includes also "Dimplomarbeit", "Tech. Lic. Theses", etc.

The Hebrew University of Jerusalem, [37]
University of Genova?, [75]

total 2 thesis in 2 schools

4.4 Report series

The following list contains references to all papers published as technical reports. The list is arranged in alphabetical order by the name of the institute.

Aristotle University of Thessaloniki, [17]
Hellenic Complex Systems Laboratory, [19, 31]
Imperial College, [47]
Institute of Psychology CNR, [202]
International Computer Science Institute, [182, 186]
International Computer Science Institute (ICSI), [176]
LASPP-FER, [246]
Politcnico di Milano, [162]
Politecnico di Milano, [163, 164, 166, 168, 170, 178, 180, 184, 193, 195, 198]
The Weismann Institute of Science, [55]
The Weizmann Institute of Technology, [62]
Universidad de Málaga, [253, 258, 286]
Universita degli Studi di Milano, [92]
University of Granada, [281, 282]
Utrecht University, [218]

total 30 reports in 15 institutes

4.5 Patents

The following list contains the names of the patents of genetic algorithms in the Mediterranean. The list is arranged in alphabetical order by the name of the patent.

- none

4.6 Authors

The following list contains all genetic algorithms in the Mediterranean authors and references to their known contributions.

total 298 articles by 421 different authors

4.7 Subject index

All subject keywords of the papers given by the editor of this bibliography are shown next. The keywords "neural networks", "optimization", and "evolution strategies" have been omitted in this list because of their high occurrence rate.

4.8 Annual index

The following table gives references to the contributions published annually.

4.9 Geographical index

The following table gives references to the contributions by country.

Chapter 5

Permuted title index

The words of the titles of the articles are shown in the next table arranged in alphabetical order. The most common words have been excluded. The key word is shown by a disk (•) in the title field with the exception that it is omitted when appearing as the first word of the title after shown keyword. The other abbreviation used to compress titles are shown in appendix A.

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Notations

†(ref) = the bibliography item does not belong to my collection of genetic papers.
(ref) = citation source code. ACM = ACM Guide to Computing Literature, EEA = Electrical & Electronics Abstracts, CCA = Computers & Control Abstracts, CTI = Current Technology Index, EI = The Engineering Index (A = Annual, M = Monthly), DAI = Dissertation Abstracts International, P = Index to Scientific & Technical Proceedings, BackBib = Thomas Bäck's unpublished bibliography, Fogel/Bib = David Fogel's EA bibliography, etc
* = only abstract seen.
? = data of this field is missing (BiBTeX-format).

The last field in each reference item in `Teletype` font is the BiBTEXkey of the corresponding reference.

Appendix A

Abbreviations

The following other abbreviations were used to compress the titles of articles in the permutation title index:

AI = Artificial Intelligence
Alg. = Algorithm(s)
AL = Artificial Life
ANN(s) = Artificial Neural Net(work)(s)
Appl. = Application(s), Applied
Appr. = Approach(es)
Cntr. = Control, Controlled, Controlling, Controller(s)
Coll. = Colloquium
Comb. = Combinatorial
Conf. = Conference
CS(s) = Classifier System(s)
Distr. = Distributed
Eng. = Engineering
EP = Evolutionary Programming
ES = Evolutionsstrategie(n), Evolution(ary) strategies
Evol. = Evolution, Evolutionary
ExS(s) = Expert System(s)
FF(s) = Fitness Function(s)
GA(s) = Genetic Algorithm(s)
Gen. = Genetic(s), Genetical(ly)
GP = Genetic Programming
Ident. = Identification
Impl. = Implementation(s)
Int. = International
ImPr = Image Processing
JSS = Job Shop Scheduling
ML = Machine Learning
Nat. = Natural
NN(s) = Neural Net(work)(s)
Opt. = Optimization, Optimal, Optimizer(s), Optimierung
OR = Operation(s) Research
Par. = Parallel, Parallelism
Perf. = Performance
Pop. = Population(s), Populational(ly)
Proc. = Proceedings
Prog. = Programming, Program(s), Programmed
Prob. = Problem(s)
QAP = Quadratic Assignment Problem
Rep. = Representation(s), Representational(ly)
SA = Simulated Annealing
Sch. = Scheduling, Schedule(s)
Sel. = Selection, Selectionism
Symp. = Symposium
Syst. = System(s)
Tech. = Technical, Technology
TSP = Travel(l)ing Salesman Problem

Appendix B

Bibliography entry formats

This documentation was prepared with LaTeX and reproduced from camera-ready copy supplied by the editor. The ones who are familiar with BibTeX may have noticed that the references are printed using `abbrv` bibliography style and have no difficulties in interpreting the entries. For those not so familiar with BibTeX are given the following formats of the most common entry types. The optional fields are enclosed by "[ ]" in the format description. Unknown fields are shown by "?". † after the entry means that neither the article nor the abstract of the article was available for reviewing and so the reference entry and/or its indexing may be more or less incomplete.

Book

Author(s), *Title*, Publisher, Publisher's address, year.

Example

John H. Holland. *Adaptation in Natural and Artificial Systems.* The University of Michigan Press, Ann Arbor, 1975.

Journal article

Author(s), Title, *Journal*, volume(number): first page – last page, [month,] year.

Example

David E. Goldberg. Computer-aided gas pipeline operation using genetic algorithms and rule learning. Part I: Genetic algorithms in pipeline optimization. *Engineering with Computers*, 3(?):35–45, 1987. †.

Note: the number of the journal unknown, the article has not been seen.

Proceedings article

Author(s), Title, editor(s) of the proceedings, *Title of Proceedings*, [volume,] pages, location of the conference, date of the conference, publisher of the proceedings, publisher's address.

Example

John R. Koza. Hierarchical genetic algorithms operating on populations of computer programs. In N. S. Sridharan, editor, *Eleventh International Joint Conference on Artificial Intelligence (IJCAI-89)*, pages 768–774, Detroit, MI, 20.-25. August 1989. Morgan Kaufmann, Palo Alto, CA. †.

Technical report

Author(s), Title, type and number, institute, year.

Example

Thomas Bäck, Frank Hoffmeister, and Hans-Paul Schwefel. Applications of evolutionary algorithms. Technical Report SYS-2/92, University of Dortmund, Department of Computer Science, 1992.