Sources of Scientific Literature for Multiagent Systems

Multiagent Systems LM
Sistemi Multiagente LM

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Academic Year 2011/2012
1 Scientific Literature
   - Scientific Literature: Generality
   - Scientific Literature: Details

2 Agent-Oriented Literature
   - General Sources of Informatics Literature
   - Agent-Oriented Journals, Series & Books
   - Agent-Oriented Conferences & Workshops
Outline

1. Scientific Literature
   - Scientific Literature: Generality
   - Scientific Literature: Details

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Scientific literature is the result of a complex process

- Involving thousands of skilled people world-wide
- Growing constantly in size and width in the last decades
- Where individual, social, organisational, economical, political issues are often as important as scientific ones
- Articulated essentially around four stages
  - production
  - publication
  - dissemination
  - access

- In general, only when all four stages are well-developed, a scientific result becomes shared and successful
Scientific literature is the result of the activity of many actors

- Many actors are involved in the process
  - researchers
  - universities & research centres
  - funding bodies
  - publishers

- They participate in the process with different aims and roles

- Abstracting away from motivations of actors in the research process could make understanding the process and its results difficult, and participating to it actively even more problematic
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Scientific Literature: The Producers

Scientific literature is essentially produced by researchers

- Researchers
  - working in the academia, industry, research institutions
  - working either individually or in team, in isolation or in research labs
  - are mainly involved in the production stage

Production of scientific results means nothing alone

- (Expert) researchers are typically involved in the other three stages, too
  - promoting, participating to, and coordinating scientific meetings
  - promoting, participating to, and coordinating scientific projects
  - promoting, participating to, and coordinating publication of books and journals
  - promoting dissemination of published results
  - possibly, making access to published results as wide as possible
- A huge number of non-scientific, non-technical issues to be faced & solved
  - like, say, fund raising
Some institutional actors have the promotion of scientific research among their main goals:

- universities
- public & private research institutes
- industrial research centres

Promoting research is not their only aim, however:

- universities have to **produce** and **transmit** knowledge
- research institutes have to make their own results visible, and possibly to transfer them to industry
- industrial research centres have to produce competitive advantage as well as long-term profits
Scientific Literature: The Sponsors

Public & private funding bodies

- Investing in research
- Funding theoretical & applied research
  - either occasionally, or systematically
  - either as an exceptional measure, or as part of the mission of the funding body
- Typical examples
  - public: European Community, Italian Ministry of Research, Region Emilia Romagna, . . .
  - private: mostly, big industrial groups like FIAT, British Telecom, Siemens, IBM, . . .

Modes for funding

- Often in the form of *projects*, involving individuals & groups from either the same body or different bodies
- Sometimes in form of *grants*, typically individual
Scientific Literature does not exist if not in a shareable form

- An idea is not a scientific result *per se*
- A scientific result is something that
  - is presented & structured in a way that can be *understood* by non-authors
  - has a form that can be *shared* and accessed by members of the scientific community
  - gives readers enough information upon its results, so that they could in principle be reproduced and possibly *confuted* by any (expert, knowledgeable) reader [Popper, 2002]
The primary sharable form for scientific results are articles (also called papers), collected and published

- in scientific journals
- in proceedings of conferences, symposia and workshops
- as chapter of collections in form of books

When stable, results are often presented in extended form, in scientific monographies
Scientific literature is subject to public control

- Before it is published an article is *submitted* in some form to a *review process*
  - for publication in a scientific journal, a book collection, a conference, a symposia, a workshop
- Review is conducted by experts in the field, and concludes in a final evaluation
- In case the article is considered worth of publication, it might anyway be revised according to the reviewer’s indications, and finally accepted for publication
- When published, the article represents a piece of scientific literature
- In case of conferences, workshops, symposia, public presentation of the article and discussion of the content is an essential part of the *dissemination* process
Scientific literature is published (and disseminated) by publishers

- Once ready, proceedings, journal issues, collections and monographies are ready as scientific products, but not yet as typographic ones
- Often, publishers intervene on the form (language, formatting, illustrations, ...) of the scientific material before it is published
  - with the consent of authors / editors
The role of publishers

- Publishers have a twofold goal
  - primarily, earn *money*—at least do not loose money
  - secondarily, earn *reputation* through high quality publications
- Publishers dictate the pace for publication of volumes / issues, the total number of pages
  - they also may provide suggestions on the general goals of a published volume / journal
- Publishers handle organisational issues, and introduce / govern *social* and *economical* factors in the scientific process
- Publishers are also in charge of *dissemination*
- Publishers rule *access* to scientific literature
Dissemination of scientific literature is a multi-faceted process

- Publication is just a premise
- Presentation at scientific meetings adds momentum
  - interpersonal communication is an essential even though non-technical key-point
- Promotion of demos at scientific meetings is fine for systems
- Mailing to selected lists may be good
  - typically done by both published and authors, if not by institutions
- Physical distribution of printed copies to individuals and libraries is another essential instrument
- However, the main tool & index of dissemination is *citation*!
The role of citations

- The main tool & index of dissemination is *citation*
  - paper A cites paper B in its bibliography
- When you read a paper, you may as well go through the bibliography, and possibly follow citations for further readings
- Citations are a measure of scientific impact
  - even though citation is not necessarily a sign of approval...
  - ...it is typically a good measure of the relevance of a scientific result
- Citations are typically used for *evaluation* of scientific production
- Web resources for citations
  - Impact Factor, ISI
  - CiteSeer http://citeseer.ist.psu.edu/
  - Google Scholar http://scholar.google.com/
Access to scientific literature is nowadays mostly Web-based

- Even though traditional means are still widespread—like participation to scientific events, and access to printed materials in libraries and personal collections.
- ... on-line access is gaining more and more ground, and is already the most important means of access to scientific literature.
- Internet & Web technologies have obviously a key role since they allow an unprecedented flow of dissemination of and access to (either published or unpublished) technical results.
- Most international publishers have on-line publication sites.
- Most of the relevant material is accessible on-line.
Producing & publishing scientific literature is not enough

- In the long run, disseminating results and providing easy & organised access to them is at least as relevant
- The ongoing efforts in the portal at http://apice.unibo.it/ are exactly aimed at that
- Other specialised portals are under development, concerning products, projects and publications as well
  - however, they are non-funded activities, based on volunteer’s efforts
  - so, the process is often slow and painful
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Digital Libraries from Main International Publishers

Springer  http://www.springerlink.com/
ScienceDirect  http://www.sciencedirect.com/
Taylor & Francis  http://journalsonline.tandf.co.uk/
IOS Press  http://www.iospress.nl/
World Scientific  http://www.worldscinet.com/
Cambridge U.P.  http://journals.cambridge.org/
InderScience  http://www.inderscience.com/
Digital Libraries from Main International Associations

**ACM DL**  [http://portal.acm.org/dl.cfm](http://portal.acm.org/dl.cfm)

**ACM** Digital Library of the Association for Computing Machinery, [http://www.acm.org/](http://www.acm.org/)

**IEEE DL**  [http://www.computer.org/portal/site/csdl/](http://www.computer.org/portal/site/csdl/)

Digital Libraries from Other Players

DBLP  http://www.dblp.org/

Google Scholar  http://scholar.google.com/

Academia.edu  http://academia.edu/

BibSonomy  http://www.bibsonomy.org/

Mendeley  http://www.mendeley.com/

Odysci  http://www.odysci.com/
Digital Libraries from Main International Associations

ACM DL  http://portal.acm.org/dl.cfm
ACM Digital Library of the Association for Computing Machinery,
http://www.acm.org/

IEEE DL  http://www.computer.org/portal/site/csdl/
IEEE CS Digital Library of the IEEE Computer Society,
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MAS Journals

**J.AAMAS**  Journal of Autonomous Agents and Multi-Agent Systems  
[http://www.springerlink.com/content/1573-7454/](http://www.springerlink.com/content/1573-7454/)

**TAAS**  ACM Transactions on Autonomous and Adaptive Systems  
[http://taas.acm.org/](http://taas.acm.org/)

**IJAOSE**  International Journal of Agent-Oriented Software Engineering  

**WIAS**  Web Intelligence and Agent Systems  

**MGS**  Multiagent and Grid Systems  
MAS-related Journals

AAI  Applied Artificial Intelligence
http://www.informaworld.com/smpp/title~content=t713191765

KER  Knowledge Engineering Review
http://journals.cambridge.org/action/displayJournal?jid=KER

SCP  Science of Computer Programming
http://www.elsevier.com/locate/scico
MAS Series

**LNCS** Springer’s Lecture Notes in Computer Science publishes most of the up-to-date MAS literature, based on a huge number of MAS-related conferences and workshops

http://www.springerlink.com/content/105633/

**LNAI** Its sub-series Lecture Notes in Artificial Intelligence collects most of the MAS-related LNCS volumes

**ENTCS** Elsevier’s Electronic Notes in Theoretical Computer Science, even though not MAS-centred, publishes also some proceedings of MAS-related conferences and workshops

http://www.sciencedirect.com/science/journal/15710661/
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MAS Conferences & Workshops

**AAMAS** Joint Conference on Autonomous Agents and Multi-Agent Systems
- since AAMAS 2002, Bologna, Italy
- joining previous Conference on Autonomous Agents (Agents), International Conference on Multi-Agent Systems (ICMAS), Workshop on Agent Theories, Architectures, and Languages (ATAL)

along with its many workshops
- DALT, E4MAS, PROMAS, AOSE, ESOA, ...
- most of them with post-proceedings published as LNCS / LNAI

**IAT** International Conferences on Intelligent Agent Technologies
**EUMAS** European Workshop on Multi-Agent Systems
**ESAW** Workshop “Engineering Societies in the Agents World”
**SELMAS** Workshop “Software Engineering for Large-scale Multi-Agent Systems”
**CIA** Workshop “Cooperative Information Agents”
**AT2AI** Workshop “From Agent Theory to Agent Implementation”
**COIN** Workshop Series “Coordination, Organisation, Institutions and Norms”
**MALLOW** Workshop Series “The Multi-Agent Logics, Languages, and Organisations Federated Workshops”
**WOA** Italian Workshop “From Objects to Agents”
**MAAMAW** Workshop “Modelling Autonomous Agents in a Multi-Agent World” (*past*)
MAS-related Conferences & Workshops

- **IJCAI** International Joint Conference on Artificial Intelligence
- **ECAI** European Conference on Artificial Intelligence
- **SAC** ACM Symposium on Applied Computing
- **AI*IA** Italian Conference on Artificial Intelligence
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*The Logic of Scientific Discovery.*
Routledge.
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