CALL FOR PAPERS

AI EDAM Special Issue, May 2010, Vol. 24, No. 2
CREATIVITY: SIMULATION, STIMULATION, AND STUDIES

Guest Editors: Mary Lou Maher, Yong Se Kim, & Nathalie Bonnardel

This Special Issue of *AI EDAM* will be devoted to papers concerned with creativity.

Engineering design, analysis, and manufacturing rely on creative thought to produce new and exciting products in new and exciting ways. The study of creativity provides many opportunities for interdisciplinary research between engineering, cognitive science, and computer science. This Special Issue is aimed at capturing a snapshot of some of the best work in this intersection of areas.

Although papers with normal AI content are desired, for this Special Issue we will broaden the scope to include papers that explicitly discuss creative thinking, types of reasoning, and explicit use of knowledge. We are interested in papers about creative results, creative processes, or both. Suitable topics include, but are not limited to, the following:

- computational models, techniques, or systems for simulating individual or team creativity in engineering (e.g., creative design);
- computational models, techniques, or systems for simulating influences on creativity in society;
- computational techniques, systems, or environments for stimulating individual or team creativity in engineering;
- models of creative reasoning;
- studies of creative reasoning; and
- techniques for evaluating products and processes for decisions about creativity.

This Special Issue will include an invited paper by Prof. Gerard J. Puccio, Chair of the International Center for Studies in Creativity.

All submissions will be anonymously reviewed by at least three expert reviewers. The selection for publication will be made on the basis of these reviews.

Information about the format and style required for *AI EDAM* papers can be found at www.cs.wpi.edu/~aiedam/Instructions/ However, note that all submissions for Special Issues go to the Guest Editors, **not** to the Editor in Chief.

Important Dates

Intent to submit (Title and Abstract):	As soon as possible
Submission deadline for full papers:	15 April 2009
Reviews due:	15 June 2009
Notification and reviews to authors:	15 July 2009
Revised version submission deadline:	1 November 2009

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CALL FOR PAPERS

AI EDAM Special Issue, August 2010, Vol. 24, No. 3
DESIGN PEDAGOGY: REPRESENTATIONS AND PROCESSES

Guest Editors: Daniel Frey, William Birmingham, & Clive Dym

This Special Issue of *AI EDAM* will be devoted to papers concerned with design pedagogy, focusing on how explicit representations of design knowledge and design processes impact teaching design.

Design pedagogy raises significant challenges for researchers in design theory, methodology, and AI. When people learn engineering design or seek to improve their skill as designers, knowledge must be constructed. The teacher is often required to formalize and structure a body of knowledge gained from experience. The student is challenged to observe carefully, form hypotheses, and test them through projects. No design method can be effective unless it is teachable, which is probably not an exaggeration.

To advance this important topic, we seek papers dealing with design knowledge and its representation in humans, software, and other processes. Papers addressing the implications for education are particularly encouraged with education broadly construed to include undergraduate, graduate, professional, and K–12.

Although papers with normal AI content are desired for this Special Issue, we broaden the scope to also include papers that provide knowledge and associated methodology for design pedagogy.

The aim of this Special Issue on design pedagogy is to further discussion at the intersection of theory and practice. Topics may include, but are not limited to, the following:

- frameworks for teaching engineering design;
- representations and models of design knowledge;
- differences between expert and novice performance in design and means to bridge them;
- assessment of design skill; and
- particular design processes, how they represent knowledge, and how they facilitate design education.

All submissions will be anonymously reviewed by at least three reviewers. The selection for publication will be made on the basis of these reviews.

Information about the format and style required for *AI EDAM* papers can be found at www.cs.wpi.edu/~aiedam/Instructions/ However, note that all submissions for Special Issues go to the Guest Editors, **not** to the Editor in Chief.

Important Dates

Intent to submit (Title and Abstract):	As soon as possible
Submission deadline for full papers:	1 May 2009
Reviews due:	30 August 2009
Notification and reviews to authors:	30 September 2009
Revised version submission deadline:	15 January 2010

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CALL FOR PAPERS

AI EDAM Special Issue, November 2010, Vol. 24, No. 4
BIOLOGICALLY INSPIRED DESIGN

Guest Editors: Amaresh Chakrabarti & Li Shu

This Special Issue of *AI EDAM* will be devoted to papers concerned with biologically inspired design.

Natural processes have led to the development of a plethora of biological systems that carry out a multitude of tasks in a highly resource-effective way within a variety of environments and constraints. Many of these tasks, environments, and constraints are similar to those relevant in engineering design. Therefore, biological systems offer a rich, potential source of inspiration for novel and resource-effective engineering designs. History shows ample anecdotal evidence of using these systems as inspiration for engineering. Biologically inspired designs were previously an outcome of individual interest or accidental exposure, but supporting their use in inspiring engineering design is rapidly developing into an area of active research and exploration. This Special Issue is aimed at providing a state-of-the-art collection of research outcomes in this emerging area.

Although papers with normal AI content are desired, for this Special Issue we broaden the scope to include papers that provide knowledge and associated methodology for biologically inspired design. Suitable topics include, but are not limited to, the following:

- models, techniques, or systems, both human-centered and computational, for (supporting) biologically inspired design (including biomimetics/biomimicry/bionics);
- models of reasoning for biologically inspired design; and
- studies of reasoning for biologically inspired design.

All submissions will be anonymously reviewed by at least three expert reviewers. The selection for publication will be made on the basis of these reviews.

Information about the format and style required for *AI EDAM* papers can be found at www.cs.wpi.edu/~aiedam/Instructions/ However, note that all submissions for Special Issues go to the Guest Editors, **not** to the Editor in Chief.

Important Dates

Intent to submit (Title and Abstract):	As soon as possible
Submission deadline for full papers:	15 September 2009
Reviews due:	15 December 2009
Notification and reviews to authors:	15 January 2010
Revised version submission deadline:	1 May 2010

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INSTRUCTIONS FOR AUTHORS

AIMS AND SCOPE

AIEDAM: Artificial Intelligence for Engineering Design, Analysis and Manufacturing is a journal intended to reach two audiences: *engineers and designers* who see AI technologies as powerful means for solving difficult engineering problems; and *researchers in AI and Computer Science* who are interested in applications of AI and in the theoretical issues that arise from such applications. The journal publishes significant, original articles about AI theory and applications based on the most up to date research in all branches and phases of engineering. Suitable topics include analysis and evaluation, selection, configuration and design, manufacturing and assembly, and concurrent engineering. Specific subareas include cognitive modeling; creativity; learning; qualitative reasoning; spatial reasoning; graphics and modeling; constraints and preferences; style and brands; human–computer interaction; multimodal interaction; computational linguistics; design and process planning; scheduling; simulation; optimization; distributed teams and systems; multiagent applications; design rationale and histories; functional, behavioral, and structural reasoning; knowledge management; and ontologies. *AIEDAM* is also interested in original, major applications of state-of-the-art AI techniques to important engineering problems (practicum papers). In addition to the rapid publication and dissemination of unsolicited research papers, *AIEDAM* is committed to producing special issues on important, timely topics. *AIEDAM* is indexed in Compendex Plus, SciSearch, Research Alert, and CompuMath Citation Index.

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Three high quality copies of articles, in English, should be submitted to the Editor.

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Paper should be typed in *double* spacing throughout, including tables, footnotes, references, and legends to tables and figures. One side of the paper, only, should be used and there should be a margin of at least 2.5 cm all around. The position of tables and figures should be clearly indicated, in sequence, in the text. Tables, footnotes, and legends to figures should be typed separately. Where it is essential for clear cross-referencing, particularly in mathematically orientated material, paragraphs and subparagraphs may be numbered, and the decimal system should be used (i.e., 1.1.1., 1.1.2., etc.). A short running title of not more than 40 characters (including spaces) should be indicated if the full title is longer than this. The name of the laboratory where the work has been carried out should be indicated on the title page and the full postal address for the despatch of proofs and offprints should be included on a separate page. Minor corrections to the manuscript may be typed or neatly printed in ink; retyping is required for significant changes. Numbers should be spelled out when they occur at the beginning of a sentence; use Arabic numerals elsewhere.

MANUSCRIPT ELEMENTS AND ORDER

Unless there are obvious and compelling reasons for variation (e.g. review articles, short communications), manuscripts should be organized as follows:

Title page. This is page 1. The title should be concise, informative, and free of abbreviations, chemical formulae, technical jargon, and esoteric terms. This page should include (a) the article's full title, (b) names and affiliations of all authors, (c) the name, mailing address, and telephone number of the corresponding author, (d) the address for reprint requests if different from that of the corresponding author, (e) a short title of 50 characters or less, and (f) a list of the number of manuscript pages, number of tables, and number of figures.

Abstract and keywords page. This is page 2 and should include (a) the article's full title, (b) an abstract of no more than 300 words, and (c) up to 5 keywords or phrases that reflect the content and major thrust of the article. The abstract should give a succinct account of the objective, methods, results, and significance of the subject matter.

Introduction. This section begins on page 3 and should clearly state the objective of the research in the context of previous work bearing directly on the subject. An extensive review of the literature is not usually appropriate.

Citations in text. Customary abbreviations will be accepted and the authors are recommended to employ Système Internationale (SI/metric) units. Special and unusual symbols should be clearly identified, especially if handwritten. Spell out acronyms at first use, but use only acronyms thereafter. All equipment supplies and products stated in the article should have the manufacturer name and location identified at first mention.

Tables. Tables should be numbered consecutively with Arabic numerals and each should be typed double-spaced on a separate sheet. All tables are to be grouped together after the references. A short explanatory title and column headings should make the table intelligible without reference to the text. All tables must be cited and their approximate positions indicated in the text.

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Artwork should normally be in black and white; if authors have color figures, the publisher will provide a price quotation for the additional production costs. However, color figures can appear online free of cost. All figures must be identified on the back with the short title of the paper, figure number, and figure orientation (top or bottom). Preferably, figures should be mounted on heavy sheets of the same size as the manuscript. Three complete sets of figures should be carefully packaged in protective envelopes, one to accompany each copy of the manuscript. Each figure must be cited and its approximate position clearly indicated within the text.

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Journal or Magazine article
Schank, R.C. (1991). Where's the AI? *AI Magazine 12(4),* 38–49.
Segre, M.A. (1991). Learning how to plan. *Robotics and Autonomous Systems 8(1–2),* 93–111.

Book
Dym, C.L. (1994). *Engineering Design: A Synthesis of Views.* New York: Cambridge University Press.

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Nierstrasz, O. (1993). Composing active objects. In *Research Directions in Concurrent Object-Oriented Programming* (Agha, G., Wegner, P., & Yonezawa, A., Eds.), pp. 151–171. Cambridge, MA: MIT Press.

Proceedings
Craw, S., & Sleeman, D. (1990). Automating the refinement of knowledge based systems. *Proc. Ninth Eur. AI Conf.*, pp. 167–172.

Proceedings with publisher identified
Mittal, S., & Frayman, F. (1989). Towards a generic model of configuration tasks. *Proc. Eleventh Int. Joint Conf. Artificial Intelligence*, pp. 1395–1401. San Francisco, CA: Morgan Kaufmann.

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