

First International Conference on Biologically Inspired Cognitive Architectures
Arlington, VA, November 13-14, 2010 * Sponsored by U. Palermo and Biomind LLC



<http://bicasymposium.com/>, <http://roboticslab.dinfo.unipa.it/bica2010/>

BICA 2010

Arlington, Virginia: November 12–14 (Saturday-Sunday), 2010
Reception starts on Friday, November 12, at **7:00 pm** in [Holiday Inn, Arlington](#)
Co-located with the November 11–13 [AAAI Fall Symposium Series](#)

CALL FOR PAPERS

The challenge of creating a real-life computational equivalent of the human mind requires that we better understand at a computational level how natural intelligent systems develop their cognitive and learning functions. In recent years, biologically inspired cognitive architectures (BICA) have emerged as a powerful new approach toward gaining this kind of understanding (here “biologically inspired” is understood broadly as “brain-mind inspired”). Still, despite impressive successes and growing interest in BICA, wide gaps separate different approaches from each other and from solutions found in biology, preventing us from solving the challenge.

The narrow focus on the challenge brings together four schools of thought: (1) *computational neuroscience*, that tries to understand how the brain works in terms of connectionist models; (2) *cognitive modeling*, pursuing higher-level computational description of human cognition; (3) *human-level artificial intelligence*, aiming at generally intelligent artifacts that can replace humans at work; and (4) *human-like learners*: artificial minds that can be understood by humans intuitively, that can learn like humans, from humans and for human needs. The comparative table created by panelists of the BICA 2009 forum clearly demonstrates that a joined discussion of the

four schools is possible and can be highly productive and synergistic (<http://bicasymposium.com/cogarch/>).

Remaining Critical Deadlines:

August 18: Paper acceptance notification.

August 27: Short (~150 words) abstract submission for publication in BICA 2010 Proceedings (IOS Press, [FAIA Series](#)).

August 31: Final camera-ready paper / abstract submission and registration due (papers must be prepared using IOS Press templates: http://www.iospress.nl/authco/instruction_crc.html).

Broader Scope and Topics

We anticipate a showcase of physical or virtual artifacts demonstrating higher cognitive and learning abilities, including:

- metacognition, human-like self-regulated learning, meta-learning,
- emotional and social intelligence, human-like behavior,
- human-like episodic and semantic memory functions,
- language acquisition and symbol grounding ,
- human-like cognitive growth ability.

Equally encouraged are works addressing theoretical aspects of the BICA challenge, including

- the 'B' in BICA and vital biological constraints for BICA informed by neuroscience,
- BICA models of robust biological learning mechanisms,
- general theory of bootstrapped and human-like learning,
- human-complete tests and metrics for artificial intelligence,
- the critical mass for human-like cognitive growth and scalability metrics ,
- the roadmap to solving the challenge.

Registration, Venue, and Submission Details

- Early [registration](#) fee is \$200 USD, due together with submission of camera-ready accepted papers or abstracts. Early student registration rate is \$80 USD and will be granted to selected students.
- Venue: Holiday Inn (<http://www.holidayinn.com/hotels/us/en/arlington/wasfx/hoteldetail>) in Arlington, VA, adjacent to Washington, DC. The selected location is across the street from the AAI Fall Symposia (<http://www.aai.org/Symposia/Fall/fss10symposia.php>).
- Submissions should be prepared using guidelines and templates specified above and emailed to both conference chairs: Alexei Samsonovich (samsonovich@cox.net or asamsono@gmu.edu) and Kamilla Jóhannsdóttir (kamillarj@gmail.com) by the deadlines specified on the first page. Formatting will be strictly enforced. All submissions (including papers and abstracts) are subject to peer review. We are looking forward to meeting you in Washington DC in November,

-- Kamilla Jóhannsdóttir and
Alexei Samsonovich (BICA 2010 Chairs)



Views of the conference site. The robotic exhibit will be on the left (bottom panel).

Format

The format of BICA-2010 is one-track session with intermittent open-format panel discussions. Each technical session focuses on a separate topic and begins with a keynote (20 minutes plus 10 minutes for discussion) followed by 4-5 regular talks (8-10 minutes plus 3-5 minutes for questions). The timing of all talks and sessions will be strictly enforced. There will be about 3 panel discussions, about 6 technical sessions with 4-6 talks in each, and a poster review session. In addition, the conference will include a social agenda: a reception on November 12, an organized BICA lunch, and a banquet (details will become available later). A very preliminary tentative schedule is currently available at <http://bicasymposium.com/bica2010schedule.htm>

Updated 08/21/2010