Michael Bobak Knowledge-Engineer / Research Programmer

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@MBstream, github.com/MBcode

Summary

Research-Programmer starting with (bio)physical-science simulation, adding AI study and years of Knowledge-Engineering work as well (in: edu/gov/com). Focus on Knowledge-Based aids, for process improvement to teaching. AI: Knowledge-Representation and Reasoning, Rules, Kn-Acq, NLP, ML

Work Experience

Freelance Consultant
July 2011-Present, San Francisco, CA
Develop startup ideas, work on a Proof of Concept for Patient Data Mining Cluster patent application that I helped start at ucsf.edu, work on an assisted eco-sim/modeling environment in Lisp, and semantic-web (industrial) IoT advice.

Apollo Education Group, Architect, Adaptive Learning Platform
Oct 2010 - Jul 2011, San Francisco, CA
Conceptually annotate study material and tests for automated remediation, instrument classroom to learn from use [Hadoop, Lisp, KM]

UCSF Programmar/Analyst III
Sep 2007-Oct 2010, San Francisco, CA
Medical-Informatics research (relating to clinical-trails) in Lisp/KM, and Natural Language Processing in Java; paper with Stanford group; ontology dev/use [Lisp, KM, ..]

Freelance Knowledge Engineer/ Research-Programmer
Feb 2001 Sep 2007, Chicago and Boston
mindbox.com 3/02-10/02. [used Art*Enterprise] See: Ocwen_Mindbox Worked up to half-time for cas.dis.anl.gov 5/03-5/04 [Java Simulation] Worked full-time 8/03-~05(verizon)labs.gte.com, Model-Based-Diagnosis on a national scale. [Art *Enterprise] See: aaai.org/Papers/IAAI/1996/IAAI96-287.pdf Bioinformatics/control contract 11/04-12/05 [CLIPS&Protege.stanford.edu/Java/DB] Control of perfusion pumps on light microscope sample, monitoring incl. Machine-vision, Bio-ontology /reasoning/Kn-mngt for the experiment setup. & Grant proposal work. Worked for CME.com 2/06-06/06 (re)organizing trade-data validation code. [CLIPS/Jess] Signal-Processing/Machine-Learning (startup) 06/06-[Lisp/etc] Hospital Informatics/Machine-Learning ghx.com 02/07-05/07-[Lisp], MachineLearning speedup for financial-scientific [Lisp]

Knowledge Based Systems Lab, Senior Research Programmer
Jun 1998-Feb 2001, Urbana, IL
Organize many levels of a very large knowledge based simulation projects. Brought over 18 programmers together to deliver a coherent product. Ran weekly group meetings, down to help solving any problem. Hiring, demo, design, install trips, prototyping to lead project direction. Taught group of 6 how to use a Rule-Based-shell for a reasoner-rewrite in Art*Enterprise. Projects included: Simulation-based, Intelligent Tutoring System (ITS) & Real-Time control system. Being used in classroom, real life testing, presented at IAAI99 '*Automated Instructor Assistant for Ship Damage Control*' - The system teaches Navy officers

how to save a simulated ship in crisis. A variant was developed to catch real-time crisis conditions and suggest solutions www.dwilkins.org/members.htm

Brightware, Knowledge Engineer
Oct 1996-Jun 1998, Chicago, IL
Helped develop and install their very first product (intelligent email reply). Worked between development and consulting. Helped on several Knowledge-Based business applications. Helped with several deployed Knowledge-Based business applications (ie. financial: mortgage, web based job finder). [Art*Enterprise] See: www.brightware.com/eservice_solutions/ &later 1/2year for the new version of the company: Mindbox.

Institute of Learning Sciences, Lead Programmer/Analyst
Feb 1996-Aug 1996, Evanston, IL
Wrote Lisp code (mainly GUI) for Qualitative Research Group. Learned more about QualitativeQuantitative Simulation, Model-Based Reasoning, Intelligent-Tutoring-Systems, and general Lisp programming.
See: www.qrg.northwestern.edu/projects/NSF/Cyclepad/aboutcp.htm

Argonne National Lab (EAD and DIS groups), Software Engineer
Feb 1993-Feb 1996, Argonne, IL
Wrote fielded Expert System by myself at the end of grad-school. [in Lisp rule-shell then CLIPS] Prototyped communication and control of distributed simulation. [in CLIPS PVM etc] Agent wrapping of simulations with CLIPS+PVM, to describe then mix and match them. Also used C++, Smalltalk, FORTRAN with PVM; Other work as needed. Algo/Viz/Etc. Written up in a book about innovative distributed object application. See: www.dis.anl.gov/DEEM HLAsim www.dis.anl.gov/DEEM/DIAS mike.bobak.googlepages.com/diaswp.pdf
Later some work for new subgroup of dis: cas.dis.anl.gov.

Education

University of Illinois, Urbana-Champaign
MS Biophysics & Computational Biology with AI, 1990-93 / **Research Assistant / Research Programmer**
BS Physics, BS Biophysics, 1983-88, dept. distinction / **Research Programmer** (½ time with allied lab)

Recent Training:

Coursera:
Data analysis
Web intelligence (with distinction)
Data Science (with distinction)
Machine Learning (with distinction)
Discrete Optimization (audit)

Other:
Semantic Web
Design Thinking
Knowledge Engineering

Early Training: Several semesters of grad AI @UIUC

Professional Organizations

AAAI (Association for the Advancement of Artificial Intelligence) life-member.
IEEE (Institute of Electrical and Electronics Engineers)& Computer Society 10yrs