Michael Bobak

Knowledge-Engineer / Research-Programmer

San Francisco, California

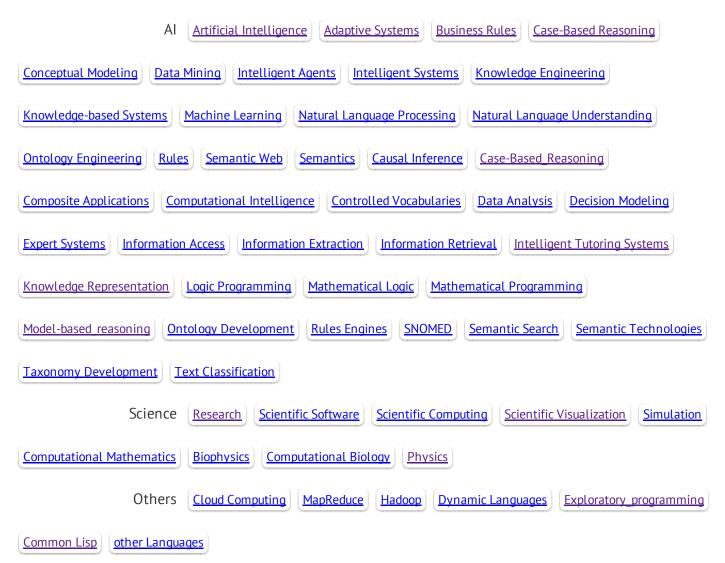mike.bobak@gmail.com | mike.bobak.googlepages.com | linkedin.com/in/michaelbobak | @MBstream

SUMMARY

Research-Programmer starting with physical-science simulation, adding AI study and years of Knowledge-Engineering work as well (edu/gov/com).

Focus on Knowledge-Based aids, for process improvement to teaching. AI: Knowledge-Representation and Reasoning, Rules, Kn-Acq, NLP, ML, ...

SKILLS & EXPERTISE

AI   Artificial Intelligence   Adaptive Systems   Business Rules   Case-Based Reasoning

Conceptual Modeling   Data Mining   Intelligent Agents   Intelligent Systems   Knowledge Engineering

Knowledge-based Systems   Machine Learning   Natural Language Processing   Natural Language Understanding

Ontology Engineering   Rules   Semantic Web   Semantics   Causal Inference   Case-Based_Reasoning

Composite Applications   Computational Intelligence   Controlled Vocabularies   Data Analysis   Decision Modeling

Expert Systems   Information Access   Information Extraction   Information Retrieval   Intelligent Tutoring Systems

Knowledge Representation   Logic Programming   Mathematical Logic   Mathematical Programming

Model-based_reasoning   Ontology Development   Rules Engines   SNOMED   Semantic Search   Semantic Technologies

Taxonomy Development   Text Classification

Science   Research   Scientific Software   Scientific Computing   Scientific Visualization   Simulation

Computational Mathematics   Biophysics   Computational Biology   Physics

Others   Cloud Computing   MapReduce   Hadoop   Dynamic Languages   Exploratory_programming

Common Lisp   other Languages

WORK EXPERIENCE

Present
July 2011

Freelance *San-Francisco, CA*

consultant

Develop startup idea/s, starting with working on a ProofOfConcept for Patient DataMiningCluster patent application that I helped start at ucsf.edu

May 2011
Oct 2010

ApolloGrp.edu *San-Francisco, CA*

Architect , Adaptive Learning Platform

Conceptually annotate study material & tests for automated remediation, instrument classroom to learn from use [Hadoop, Lisp, KM]

Oct 2010
Sep 2007

UCSF.edu *San-Francisco, CA*

Programmar/Analyst III

Medical-Informatics research (relating to clinical-trails) in Lisp/KM, and Natural-Language-Processing in Java/etc; paper with Stanford group; ontology dev/use [Lisp, KM, ..]

Sep 2007
Feb 2001

Freelance *Chicago/Boston*

Knowledge-Engineer/ Research-Programmer

mindbox.com 3/02-10/02. [used Art*Enterprise] See: Ocwen_Mindbox Worked up to half-time for http://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]

Feb 2001
Jun 1998

kbs.ai.UIUC.edu *Urbana, IL*

(Senior) Research Programmer (Knowledge Based Systems Lab)

University of Illinois Urbana-Champaign, IL Organize many levels of a very large knowledge based simulation projects. Brought over 18 programmers together to deliver a coherent product. Ran weekly (sub)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 http://www.dwilkins.org/members.htm

Brightware *out of Chicago, IL*

Jun 1998
Oct 1996

Knowledge-Engineer

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: http://www.brightware.com/eservice_solutions/ More recently I worked 1/2year for the new version of the company: Mindbox.

Institute of Learning Sciences *Evanston, IL*

Aug 1996
Feb 1996

Lead Programmer/Analyst

Wrote Lisp code (mainly GUI) for Qualitative Research Group. Learned more about Qualitative/Quantitative Simulation, Model-Based Reasoning, Intelligent-Tutoring-Systems, & general Lisp programming. See: http://www.qrg.northwestern.edu/projects/NSF/Cyclepad/aboutcp.htm

Argonne National Lab *Argonne, IL*

Feb 1996
Feb 1993

Software Engineer (EAD then DIS groups)

Wrote fielded Expert System by myself at the end of grad-school. [in Lisp rule-shell then CLIPS] Prototyped communication & 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: http://www.dis.anl.gov/DEEM HLAsim http://www.dis.anl.gov/DEEM/DIAS mike.bobak.googlepages.com/diaswp.pdf _More recently I worked part-time for the new subgroup of dis: cas.dis.anl.gov.

UIUC.edu *Urbana, IL*

Jan 1993
Jan 1990

Graduate Research Assistant /Research Programmer

Wrote molecular graphics package used in classes & for publications. [in C] Used machine-learning techniques for protein structure prediction.
Wrote thesis on Knowledge-Based Simulation Environment. [Lisp/OPS5/C] Overseen by heads of the NCSA CompBio group and head of Biophysics at the time. see:

Dec 1989	**[National Center for Supercomputing Applications]NCSA,Uof IL,GIST** *Urbana/Savoy, IL*
Apr 1989	Programmer/Consultant

Suggested scientific software path for Software Tools Group of NCSA; Wrote molecular viz code for a professor. Wrote testing code for Global Info Systems Tech. [in C]

Apr 1989	**Shearson Lehman Hutton** *London, England*
Oct 1988	Programmer (Research Computing)

Maintained financial databases & daily report information. Organized worldwide mailing system. Wrote statistics code for stock predictions. [MUMPS and Maths-package]

Aug 1988	**US Army Corp. of Eng. Research Lab** *Champaign, IL*
Mar 1982	Research Programmer (Modeling then Acoustics teams)

Provided research support from start to finish. [FORTRAN] Wrote and ran computer simulation code, compared output with field data. Did field measurements to back up predictions. (Team/Self; Local/US/World-wide) My work went into several published papers. GRASS: http://grass.fbk.eu/

EDUCATION

University of Ilinois, Urbana-Champaign

MS Biophysics & Computational Biology with AI, 1990-93

BS Physics, BS Biophysics, 1983-88, dept. distinction

PROFESSIONAL ORGANIZATIONS:

AAAI (Association for the Advancement of Artificial Intelligence) life-member.
IEEE (Institute of Electrical and Electronics Engineers)& Computer Society 10yrs
also: meetup.com, linkedin-groups, & github opensource examples

Programming Languages/...:

19+ years overall	*ObjOPLs* [14+ years]	*Rule-Based KnRep& R:* [10+ years]:	Libs:	Databases:	Operating-Systems:
C(6+ years) FORTRAN(6+ yrs)	Smalltalk (~1 yr) C++(1+yr)	OPS5, Prolog, GoldWorks(<1yr)	Viz: *Open*GL(3+ yrs)	MS-Jet/SQL, MySQL	NeXTSTEP, MS(NT..XP) (8+ yrs)
Scheme (~1 yr) MUMPS (1/2yr)..	Python(< 1yr), Java (1+ yr)	CLIPS(4+yrs),ART(4+yrs)	HPC: PVM (1+yr)	PostgreSQL, ORDB	UNIX (18+ years), incl.GNULinux
Lisp (7+yrs of CL 10+yrs of others)	CLOS [CL - Object-System]	Knowledge-Machine(3+years), JESS(1 yr), Protege(6+yrs)	WS:Tomcat/Axis SOAP/REST	Graph&triple persistance &other NoSQL	OS-X.Darwin(10+ years)