Michael Bobak Seeking creative computational problem-solving post

as either a**: Knowledge-Engineer, Scientific/Research-Programmer**/Systems-Analyst/Architect, Scientist, Multi-disciplined Research/**Software-Engineer.**

Want to further my knowledge/experience with Artificial Intelligence/Modeling&Simulation techniques; through stimulating peer interaction, challenging projects. Interests include: Knowledge-(Representation/Reasoning/Mngt) for cooperative Scientific modeling[e-Science, Semantic(Web/Grid)Services] via multi-use Model-Based-Reasoning/descriptive(layer of logic) to use preconstructed applications&data. Prefer dynamic(event-driven)language/environments. Having a Lisp(like)language, use of AI techniques& a science-based domain, would do it for me. **Interest come together in Knowledge-Based-Modeling&Simulation Environments, or any type of Assisted Problem-Solving-Environments.** AI_techniques,incl.:KnRep&Reasoning,KnAcq,NLP,ML,Rules,Agents,Semantics.

Contact: mike.bobak@gmail.com http://mike.bobak.googlepages.com/ 2104 Bryant San-Francisco, CA 94110

Education: University of Illinois, Urbana-Champaign

M.S. Biophysics & Computational Biology, (with focus in AI)
October 1993 Thesis: *Molecular Simulation with Expert Rules* (in OPS5/Lisp/C)
B.S. Physics and B.S. Biophysics, May 1988 dept-distinction

Programming[19+ years]   *Object Orientated:* [14+ yrs]   *Rule-Based,KR&R:* [10+ yrs]:

Programming[19+ years]	Object Orientated: [14+ yrs]	Rule-Based,KR&R: [10+ yrs]:
C (6+ years)	C++ (1+ years)	CLIPS(4+yrs)[C Language Integrated Production System]
FORTRAN (6+ years)	Smalltalk (~1 year)	ART-Enterprise(4+yrs)JESS(1 yr)
Lisp (7+years of CL 10+years of others)	Python(< 1year), Java (1+ year)	Knowledge-Machine(3+yrs)
Scheme (~1 yr), MUMPS (1/2 year),..	CLOS [Common-Lisp-Object-System]	GoldWorks(<1 yr),Protege(6+yrs)
CLIPS (4+ years) based upon ART*Enterprise&it's COOL [CLIPS Object Orientated Language]		OPS5[OfficialProductionSystem5],Prolog

Libs: Viz/HPC/ Database/Web Services/ Operating-Systems:

SGI's Graphics Language (*Open*GL) (3+ years)   PVM [Parallel-Virtual-Machine], Hadoop (½ year)
MS-Jet/SQL, MySQL, PostgreSQL, ORDB-link &persistent-store   Tomcat/Axis SOAP, jsp; Semantics via Protege-OWL/SWRL/Jess
UNIX (18+ years), incl. Linux, OS-X/Darwin (10+ years), NeXTSTEP, MS(NT/Win2k/XP) (8+ years)

College Course work related to Artificial Intelligence (AI):   & Extracurricular Experience:

Pattern Recognition & Machine Learning	Programming Language Principles	*Physics Society* officer, (vp/etc) 3 years.
Special Topics in Neural Networks	*Mathematical Modeling* & *Visualization*	*Community Radio Station show, 2 years*
Introduction to Artificial Intelligence	Computer Models of Cognitive Processes	*Other groups and volunteering.*
Computer Inference&Knowledge Acquisition	Design of Computer Problem Solvers	

Mechanized Mathematical Inference -*(1/2 of)*   *Building Problem Solvers*   ## Professional Organizations:
AI-2 http://aima.cs.berkeley.edu/   *Numerical Analysis*   AAAI (Association for the Advancement of Artificial Intelligence)
Human Computer Interaction (HCI)   &further reading   IEEE (Institute of Electrical and Electronics Engineers)& Computer Society

Links: https://github.com/MBcode https://twitter.com/mbstream http://linkedin.com/in/michaelbobak &several meetup groups

Work Experience:

Freelance/Consulting develop startup ideas, incl ProofOfConcept for ucsf data-mining pattent application I'm on 7/2011-present

Architect-Adaptive Learning Platform   ApolloGrp.edu (for UofPhoenix)   San-Francisco   10/2010-7/2011
Conceptually annotate study materials& tests for automated remediation, instrument classroom to learn from use-patterns

Programmar/Analyst III   University of California San-Francisco   9/2007-2010
Medical-Informatics research conceptual tagging of medical-text, NLP Ontology dev/use paper http://rctbank.ucsf.edu/home/ergo

Knowledge Engineer Freelance: Mindbox/etc   from Chicago, IL   2/2001-9/2007
Worked through http://www.mindbox.com 3/02-10/02. [used Art*Enterprise] See: "http://softdist.mindbox.com/pressreleases/Ocwen Mind Box.doc" Worked upto ½ time for http://cas.dis.anl.gov 5/03-5/04 [used Java Simulation] Worked full-time 8/03-~05 Verizon labs.gte.com, Model-Based-Diagnosis on a national scale. [Used Art *Enterprise] See: http://mike.bobak.googlepages.com/IAAI96-SSCFI.pdf   Bioinformatics/control contract 11/04-12/05 [Used 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. [using 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]

(Senior) Research Programmer (Knowledge Based Systems Lab) U of Illinois Urbana-Champaign   6/1998-2/2001
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 crisis conditions and suggest solutions, in real-time.
http://www.dwilkins.org/memebers.htm

Knowledge Engineer   Brightware   Novato, CA   *10/1996-6/1998*
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). All with Art*Enterprise. See: http://www.brightware.com/eservice_solutions/ More recently I worked 1/2year for the new version of the company: Mindbox.

Lead Programmer/Analyst Institute of Learning Sciences Qualitative Reasoning Group Evanston, IL   *2/1996-8/1996*
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

Software Engineer (EAD then DIS groups) Argonne National Lab Argonne, IL   2/1993-2/1996
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 http://www.dis.anl.gov/DEEM/DIAS
http://mike.bobak.googlepages.com/bobak/diaswp.pdf _More recently I worked part-time for the new subgroup of dis: cas.dis.anl.gov.

Graduate Research Assistant /*Research Programmer*   University of Illinois Urbana-Champaign, IL   1/1990-1/1993
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: http://web.bilkent.edu.tr/ncsa/Apps/CBdir.html

Programmer/Consultant[National Center for Supercomputing Applications]*NCSA,Uof IL,GIST Urbana-Champaign, IL*   *4/1989-12/198*
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]

Programmer (Research Computing) Shearson Lehman Hutton   London, England   10/1988-4/1989
Maintained financial databases & daily report information. Organized worldwide mailing system. Wrote statistics code for stock predictions. [MUMPS and Maths-package]

Research Programmer (Modeling then Acoustics teams) CERL (Construction Engineering Research Lab) Urbana-Champaign, IL   3/1982-8/1988
Provided research support from start to finish. Wrote and ran computer simulation code, compared output with field data. [FORTRAN] Did field measurments to back up predictions. (Team/Self; Local/US/World-wide) My work went into several published papers. See:http://adsabs.harvard.edu/cgi-bin/nph-bib_query?1987ASAJ...81..638J & 1987nce..conf..215R
http://www.cecer.army.mil/td/tips/pub/details.cfm?PUBID=1452&TOP=1 Early work went into GRASS:
http://grass.itc.it/intro/general.php

Early summary: Started as a research-programmer in high-school, through both undergrad-degrees. Then a work-abroad, and work back home before starting grad-school. Crafted a Computational-Science degree, and went to Chicago for DOE work.

Experience Summary: Modeling&Simulation and AI work has helped my design and algorithmic skills. Growing up around UIUC, using networked computers (*PLATO*) since early grade-school, early tech-groups (sci/eng/CS), then work in & around super-computing, has set my standards for what is a good/ interesting system, quite high. I get something out of all of my work, yet think I can do more. So I continue to look for places that I can enact *(at least parts of)* my vision. I prefer scientific applications, but the ability to push the norm with innovative applications wins out in any domain. If your IT dept. already has the skills for what you want done, I probably shouldn't work for you. I should be helping you with a multi-disciplined problem, by leveraging my varied background. I am a uniting force as both a knowledge worker&kn-engineer. If it isn't clear, I don't just write code. If you just want code written and no problem solved along the way; then I can only do that short-term.