Michael Bobak **Seeking creative computational problem-solving post as** either a**: Knowledge-Engineer, Scientific/Research-Programmer,** Systems/Data/Information-Analyst/Architect, Scientist, Multi-disciplined Research/Software-Engineer.
I solve problems using my varied background, I don't just program; If all you have is a spec or something to be tended, I'm not interested.
I continue to further my knowledge/experience with Artificial Intelligence/Modeling&Simulation techniques; through stimulating peer interaction, challenging projects. Particular interest in a Knowledge-Based-Modeling&Simulation Environment, Assisted Problem-Solving-Environments.
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/data-driven)language/environments. Having a Lisp(like)language, use of AI techniques&a science/fun domain, would do it for me.

Educational Background   M.S. Biophysics & Computational Biology, (with focus in AI) [B.S. Physics and B.S. Biophysics]

University of Illinois, Urbana-Champaign, May 1988 dept-distinction, October 1993 Thesis: *Molecular Simulation with Expert Rules* (in OPS5/Lisp/C)

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Work Experience:

Freelance: 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. *SF, CA 7/2011-present*

Architect – Adaptive Learning Platform used Lisp/KM Hadoop   *ApolloGrp.edu SanFrancisco, CA   10/2010-7/2011*
Conceptually annotate study material & tests for automated remediation, instrument classroom to learn from use

Programmer/Analyst III   University of California San-Francisco   9/2007-6/2010   http://rctbank.ucsf.edu/
Medical-Informatics research(relating to clinical-trails) in Lisp/KM, Natural-Language-Processing in Java/etc; paper with Stanford group; ontology dev/use: http://rctbank.ucsf.edu/home/ergo ..

Knowledge Engineer Freelance Consultant *Chicago, IL 2/2001-9/2007* Rule-based,Case-based,Machine-learning/Data-Mining, &any Lisp work.

http://mindbox.com/ 3/02-10/02. [used Art*Enterprise] See: Ocwen_Mindbox Worked up to ½ 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: http://www.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]* Protege&Lisp Hospital Informatics/Machine-Learning ghx.com 02/07-05/07-[Lisp], Machine Learning speedup for financial-scientific [Lisp]; http://rctbank.ucsf.edu/ 08/07-[Lisp]

(Senior) Research Programmer (Knowledge Based Systems Lab)   6/1998-2/2001

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
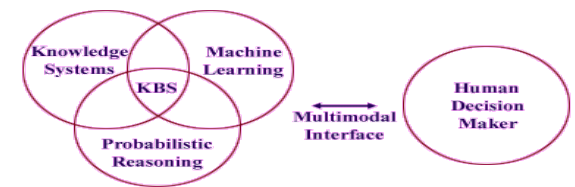
Knowledge Engineer Brightware Novato, CA   10/1996-6/1998

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). [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 *QualitativeReasoningGroup 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 HLAsim 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 IllinoisUrbana-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, 4/1989-12/1989*

Suggested scientific software path for *SoftwareToolsGroup* of NCSA; Wrote molecular viz code@uiuc. Wrote testing code for GlobalInfoSystemsTech. [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 Construction Engineering Research Lab Urbana-Champaign, IL 3/1982-8/1988

(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.   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 GRASS: http://grass.fbk.eu/

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.

Programming Skills [19+ yrs]	*Object Orientated* [14+ yr]	Libs:	Databases:	Operating-Systems:
C (6+ years) FORTRAN (6+ yrs)	Smalltalk (~1 yr) C++ (1+ yr)	Viz: *Open*GL(3+ yrs)	MS-Jet/SQL, MySQL,PostgreSQL	NeXTSTEP, MS(NT..XP) (8+ yrs)
Scheme (~1 yr) MUMPS (1/2yr)..	Python(< 1yr), Java (1+ yr)	HPC: PVM (1+yr)	ORDB_noSQL:mongo/redis	UNIX (18+ yrs), incl.GNULinux
Lisp (7+yrs of CL 10+yrs of others)	CLOS [CL -Object-System]	WS:Tomcat/Axis SOAP/REST	Graph&triple persistance	OS-X.Darwin(10+ years)

Rule-Based Languages, KnRep&Reasoning: [10+ years]:

OPS5[OfficialProductionSystem5], Prolog, GoldWorks(< 1 yr), CLIPS(4+yrs),ART-Enterprise(4+yrs), Knowledge-Machine(3+yrs), JESS(1 yr), Protege(6+yrs)

College Course work related to	**Artificial Intelligence (AI):**	**Recent Training:**		
Pattern Recognition & Machine Learning	Programming Language Principles	**Coursera:**	**Data analysis**	**Other:**
Special Topics in Neural Networks	*Mathematical Modeling* & *Visualization*	*Web intelligence (with distinction)*		Semantic Web, *Design Thinking*
Introduction to Artificial Intelligence	*Building Problem Solvers*	*Data Science (with distinction)*		*Knowledge Engineering*
Mechanized Mathematical Inference -(1/2 of)	*Human Computer Interaction*(HCI)		*Knowledge Engineering w/Semantic Web technology*	
Computer Inference&Knowledge Acquisition	*Design of Computer Problem Solvers*	*Machine Learning (with distinction)*		other research as needed
Computer Models of Cognitive Processes	*AI-2* http://aima.cs.berkeley.edu/	Discrete Optimization (audit)		incl several archived classes
(College)Extracurricular:	*Several groups incl:*	***Professional Organizations***:		
Physics Society officer, (vp/etc) 3yrs	*Community Radio Station show, 2 yrs*	*AAAI* (Association for the Advancement of Artificial Intelligence) life-member.		
Meetings: micro-blog:	Code portfolio:	IEEE (Institute of Electrical and Electronics Engineers)& Computer Society 10yrs		
meetup.com user:5734460 twitter: @Mbstream	https://github.com/MBcode	http://www.linkedin.com/in/michaelbobak (50 groups)		

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.