


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) 

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: OpenGL (3+ yrs)	MS-Jet/SQL, MySQL	NeXTSTEP, MS(NT..XP) (8+ yrs)
Scheme (~1 yr) MUMPS (1/2yr)..	Python(< 1yr), Java (1+ yr)	HPC: PVM (1+yr)	PostgreSQL, ORDB	UNIX (18+ yrs), incl. GNU Linux
Lisp (7+yrs of CL 10+yrs of others)	CLOS [CL -Object-System]	WS :Tomcat/Axis SOAP/REST	Graph&triple persistence	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):	College Extracurricular Experience:
Pattern Recognition & Machine Learning	Programming Language Principles	<i>Physics Society</i> officer, (vp/etc) 3yrs; <i>Community Radio Station show</i> , 2 yrs ..
Special Topics in Neural Networks	<i>Mathematical Modeling & Visualization</i>	Professional Organizations:
Introduction to Artificial Intelligence	Building Problem Solvers	AAAI (Association for the Advancement of Artificial Intelligence) life-member.
Mechanized Mathematical Inference <small>-(1/2 of)</small>	<i>Human Computer Interaction(HCI)</i>	IEEE (Institute of Electrical and Electronics Engineers)& Computer Society 10yrs
ComputerInference&KnowledgeAcquisition	Design of Computer Problem Solvers	http://www.linkedin.com/in/michaelbobak (50 groups)
Computer Models of Cognitive Processes	AI-2 http://aima.cs.berkeley.edu/	meetup.com user:5734460 twitter : @Mbstream https://github.com/MBcode

Contact: bobak@computer.org (415) 894-9724 2104 Bryant San-Francisco, CA 94110 <http://mike.bobak.googlepages.com/>


Work Experience:

Freelance: develop startup idea/s, which started with working on a *ProofOfConcept* for our *Patient DataMiningCluster* patent application at *ucsf.edu* 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

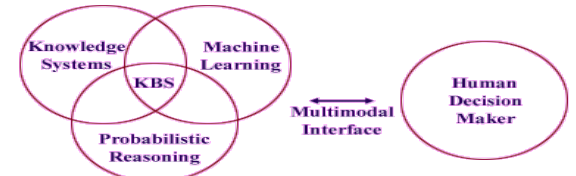
Knowledge Engineer Freelance Consultant Chicago, IL 2/2001-9/2007 Rule-based,Case-based,Machine-learning/Data-Mining, &any Lisp work.



<http://mindbox.com/> 3/02-10/02. [used Art*Enterprise] See: [Ocwen Mindbox](http://cas.dis.anl.gov) Worked upto 1/2 time for <http://cas.dis.anl.gov> 5/03-5/04 [Java Simulation] Worked full-time 8/03--05([verizon](http://www.verizon.com))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], MachineLearning 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](http://www.brightware.com) 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>

The Institute for the Learning Sciences

NORTHWESTERN UNIVERSITY

Software Engineer (EAD then DIS groups) Argonne National Lab Argonne, IL

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.

2/1993-2/1996



Graduate Research Assistant /Research Programmer University of Illinois Urbana-Champaign, IL

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/>



US Army Corps of Engineers

Engineer Research and Development Center

Construction Engineering Research Laboratory

Early summary: Started as a research-programmer in high-school, through both undergrad-degrees. Then a [work-abroad](http://www.cecer.army.mil), and work back home before starting grad-school. Crafted a [Computational-Science](http://www.cecer.army.mil) degree, and went to Chicago for [DOE](http://www.cecer.army.mil) work.