

OXSANA KOHUTYUK

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EDUCATION

From 01/2004 PhD student, Computer Science Department, Iowa State University,
Ames, IA
12/2003 **Bachelor of Science in Computer Science with Distinction**
Iowa State University, Ames, IA
1997 - 2000 Clarke College, Dubuque, IA

RESEARCH INTERESTS

Machine Learning, Data Mining, Bioinformatics and Computational Biology, Complex Adaptive Systems, Intelligent Agents and Multi-agent Systems

CURRENT RESEARCH PROJECTS

Retinal Workbench

Project goal:

- Development of a flexible interactive database querying system that allows to easily design and re-use custom-built queries on genetic networks, and includes several methods for constructing networks from expression data.

The developmental proteome of retinal progenitor cells, with Dr. Mary H. Greenlee and Dr. Vasant Honavar

Project goals:

- Analysis of protein expression levels under various developmental states in retina
- Identifying co-regulated genes and assigning genes to functional families
- Performing gene clustering and statistical analysis
- Building a model to determine underlying genetic signaling pathways

Analysis of environmental factors in mutation rates of virtual bacteria

Project goals:

- Examining the factors affecting mutation rates in a simulated evolutionary system
- Studying modifications in the behavior, mutation rate, and genome length of virtual "bacteria" under changing environmental conditions

UNDERGRADUATE PROJECTS:

Calculation of Commutators for Quantum Green's Functions, Com S 472 (Introduction to Artificial Intelligence)

- Created a program performing symbolic manipulation on the complex commutator expressions involving many secondary quantization operators.
<http://www.public.iastate.edu/~kohutyuk/AIwebsite/index.htm>

Hotel Management System, Com S 309 (Software Engineering)

- Designed a Windows-based software that automated a hotel reservation process and allowed an easy reservation management and guest check-in and check-out.

COMPUTING SKILLS

Hardware IBM, Macintosh

Operating Systems Windows '95, '98, NT, Me, XP; UNIX, LINUX, DOS

Software Applications

MS Word, Access, Excel, Binder, PowerPoint, Microsoft Visual Studio (C++, J++, Basic); Borland JBuilder, Borland C++ Builder; Macromedia Dreamweaver, Macromedia ColdFusion, Macromedia Flash 5, Adobe Photoshop, Adobe PageMaker, QuarkXPress, Aldus Freehand; Mathematica 3.0, R 1.4.1, MAX2 3D Studio; Chez Scheme, MSSQL;

Programming Languages

C++, Visual Basic, Java, Scheme, HTML, DHTML, CSS, OpenGL, SQL, JDBC, XML, some Turbo Pascal, some COBOL

Other Skills

Gene expression clustering, artificial neural networks, classifiers

LANGUAGES

English, Ukrainian, Russian (all fluent), some German, some Polish, some Spanish

WORK EXPERIENCE

06/04 - now Research Assistant, AI Research Laboratory, Iowa State University

- Created a software application performing ART2 clustering
- Conducted research in the area of gene expression analysis

03/03-05/03 Tutor, Student Services, Iowa State University, Ames, IA

- Tutored students for Stat 330 course (Statistics with applications to Computer Science)

08/00-11/00 Web designer, NetSmart, Inc., Dubuque, IA

- Designed high-end interactive web sites

09/98-05/99 COBOL Programmer, McKessonHBOC, Dubuque, IA

- Maintained software programs automating healthcare processes and interactions between healthcare providers and insurance companies
- Developed effective solutions for the Y2K problem

09/98-05/99 Software Developer, CarteGraph Systems, Inc., Dubuque, IA

- Developed Windows-based asset management/GIS software solutions for the public works industry

09/98-05/00 Technical Assistant, Keller Computer Center, Clarke College, Dubuque, IA

- Assisted Clarke College students and Computer Center staff
- Provided over-the-phone technical support to students for the whole campus

HONORS AND AWARDS

- 06/04-05/05 Research assistantship funded by NIH grant number 1R03EY014931-01
- National Dean's List (Spring 2004, Fall 1997, Spring 1998)
- Dean's List (Fall 2002, Fall 1997 - May 2000)
- CyCare Scholarship, Clarke College, IA (Fall 1998, Spring 1999)

EXTRACURRICULAR ACTIVITIES

- Member of Upsilon Phi Epsilon (Association of Computer Science students)
- Member of Clarke College Computer Club (1997 - 2000)
- Member of Ballroom Dance Club, Iowa State University