

# MARJAN TRUTSCHL

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## Objective

Obtain a position as an information scientist, data miner / knowledge discoverer or visualization expert.

Focus on the field of visualization, data mining, computer graphics as applied to bioinformatics and cheminformatics.

## Technical Summary

Extensive 10+ years software development experience using programming, scripting and markup languages, databases and API's, including Java, JDBC, Swing, C++, C, Perl, Tcl/Tk, Vtk, Matlab, MySQL, and other software development for data mining, knowledge discovery and human-computer interaction in various fields. More than 6 years of teaching experience of college level courses. Highly skilled with a variety of data mining, visualization and database tools and development suites (including Clementine, SPSS, Spotfire, SGI Mineset, Visual Insights ADVIZOR) under an array of operating systems (Linux, Solaris, DEC Unix, Irix, Windows 98/NT/2000/XP). Ability to apply visualization and machine learning tools and techniques to solve a variety of complex problems.

## Education & Credentials

### UNIVERSITY OF MASSACHUSETTS LOWELL – Lowell, MA

**Sc.D. in Computer Science**, April 2002 (GPA 3.625)

Sc.D. Dissertation Topic: "SOMn: Self-Organizing Map for Data Exploration and for Feature Extraction"

Concentration in visualization, knowledge discovery and bioinformatics

**M.S. in Computer Science**, May 1997

Concentration in visualization, computer graphics and data mining

Outstanding CS Graduate Student, ACM & IEEE member, recipient of private and University scholarships and fellowships

IEEE Visualization 1999-2000 Student Volunteer co-Chair, Founder & President Graduate Linux Group, Graduate Java Club

### LOUISIANA STATE UNIVERSITY – Shreveport, LA

**B.S. in Computer Science with minor in Electronics**, May 1994

National Dean's List, LSUS Dean's List, 1<sup>st</sup> Place in regional C programming contest, Outstanding CS Student

Member of Chancellor's Student Advisory Board, ACM member, OΔK Leadership Honor Society

Recipient of the Outstanding Leadership Award, as well as numerous private and University scholarships and fellowships

## Other Relevant Training and Skills

- Extensive experience in Assembler, Natural 2, FORTRAN, Scheme, ML, static and dynamic HTML, VRML, Motif, OpenGL, Mathematica
- "Object-Oriented Software Design using UML", TRGI, 1997
- Principles of Biology I and II
- Proficient in English, Slovenian, Croatian, working knowledge of German, some Spanish
- Strong analytical skills, ability to work independently and cross-functionally as a vital member of a team, enthusiastic, quick learner

## Employment and Research Experience

### UNIVERSITY OF MASSACHUSETTS LOWELL

Lowell, MA

**Research Assistant**, Institute for Visualization and Perception Research (1998-present)

Worked on data mining of genomics data using and developing multi-dimensional analytic and visualization techniques.

*Key projects:*

- Visualization and data mining of yeast expression and other proprietary profiles for Genetics Institute, Cambridge, MA
- Technical support for the Center for Bioinformatics and Computational Biology
- Knowledge discovery and mining of proprietary data sets for Millennium Pharmaceuticals and Pfizer, Inc.
- Stereoscopic visualization of the ionosphere for Air Force Geophysics Laboratory at Phillips Labs, Hanscom AFB, MA
- Development of 3D visualization tools using "Crystal Eyes" stereoscopic goggles for human interaction and perception studies of noisy distractors and stimulus redundancy on visual search, under US government grants
- System administration: assembly, configuration and maintenance of Linux servers in addition to technical support to graduate students and faculty (covering Linux servers, networks, databases, Windows, other software)

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## **Adjunct Faculty**, Continuing Studies and Corporate Education (1996-present)

Taught several college credit courses: **Java Programming**, **Exploring the Internet**, **Introduction to HTML**. Courses included the following languages and protocols: Java 2, Swing, Java Developer Suites, JavaScript, Perl, Cascading Style Sheets, XML, HTML, Dynamic HTML, Web protocols, server basics. Tasks included lectures, all material preparation and grading.

## **Teaching Assistant**, Computer Science Department (2000)

Taught 91.113 Exploring the Internet course (lectured, prepared all materials and graded student work)

## **Co-Founder**, Anvil Informatics (1999)

Part of the organizational team that helped incorporate the company in 2000 as a commercial venture development from UMass. Contributed to the initial data mining work and development of tools and technology.

## **Research Assistant**, Center for Industrial Competitiveness, Center for Family, Work and Community (1994-1997)

- Managed, organized and engineered relational databases of patents, inventors, patent citations and related information for inventions. Developed software for analysis of patterns of co-invention, company technology strategy and trajectory of technological evolution as reflected in patent citation sequences.
- Developed software using C and MapInfo to analyze industry and community-related data. Resolved queries and developed efficient computer visualization techniques using GIS software, conducted GIS and Internet training.

## **SPACETEC IMC**

**Lowell, MA**

### **Research Engineer**, University of Massachusetts Lowell Grant (1997-1998)

Developed 3D computer graphics and 3D interaction using 6DOF input devices (SpaceBall, SpaceOrb)

## **LOUISIANA STATE UNIVERSITY**

**Shreveport, LA**

### **Research Assistant**, Louisiana State University Medical Center (1992-1993)

Provided technical and programming support to the research team by recording and analyzing the results of drug-related experiments performed on brains of the Southern Salamander using BrainWave software package.

## **Database Programmer and Internet Consultant**, Computer Science Department and Computer Center (1992-1994)

Developed database applications in ADABAS using Natural2 programming language. Provided technical support, taught efficient use of Internet, tackled and solved university-wide computer and network problems.

## **SOFTDISK PUBLISHING, Inc.**

**Shreveport, LA**

### **Freelance Programmer** (1991-1994)

Developed computer games and utility programs using C. Developed skills and experience in computer graphics, design of graphic user interfaces (GUI) and computer game design.

## **YUGOTOURS, Ltd.**

**London, UK**

### **Representative** (1988-1991)

Managed arrivals and departures and local arrangements for British guests in Austria, Italy and Slovenia. Administered data management, worked as a liaison with local providers, supervised accommodations and coordinated local activities.

## **Publications, Presentations & Professional Work**

- Provisional Patent Holder
- “*SOMn: Self-Organizing Map for Feature Extraction*,” paper submitted to IEEE Visualization Conference, 2002.
- “*High-Dimensional Visualizations*,” G. Grinstein, M. Trutschl, U. Cvek, 7<sup>th</sup> Data Mining Conference-KDD 2001.
- “*Java-How to Program*, 3<sup>rd</sup> Edition” Deitel et al., Prentice Hall, invited reviewer, 1999.
- “*Data Mining of Yeast Functional Genomics Data Using Multidimensional Analytic and Visualization Techniques*,” U. Cvek, A. Gee, P. Hoffman, D. Pinkney, M. Trutschl, H. Zhang, K. Marx, G. Grinstein, Drug Discovery Technology 1999.
- “*Input Devices*,” M. Trutschl, G. Grinstein, invited article in Wiley Encyclopedia of EE Engineering, J. Wiley and Sons, 1999.
- “*Effects of Noisy Distractors and Stimulus Redundancy on Visual Search*”, L. D. Smith, R. M. Pickett, M. Trutschl, Eastern Psychological Association, Boston, 1998.
- “*CGI Programming for the WWW Using Perl*,” “*Internet and WWW*,” invited talks, Greater Lowell and Boston User’s Group, Boston Computer Society, 1996-1997.
- “*Guidelines for Effective Use of Internet Resources*,” Technology Grant Report, President’s Office, UMass Lowell, 1995.
- “*Comparison of Two Fractal Generation Methods*,” Undergraduate Research Forum, Louisiana State University, 1994.

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### References

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