

# Curriculum Vitae



## Personal data

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Language skills: English (good), German (basic), Hungarian (native)

## Studies

2004 – 2005 PhD Studies at Eötvös Loránd University  
2002 – 2004 Eötvös Loránd University, Biophysics  
1998 – 2002 Budapest University of Technology and Economics, Software Engineering  
2001 okt. – 2002 nov. Notre Dame University, USA; visiting research student in the networks research group  
1996 – 2001 Eötvös Loránd University, Budapest, Physics  
1991 – 1996 Fazekas Mihály Secondary School, Budapest; mathematics at advanced level

## MSc thesis

Title: Modeling of biological networks  
Supervisor: Tamás Vicsek

## Fields of interest

networks research, human interface design, operating systems and databases

## Programming, operating systems, IT skills

- Expert level (5-10 years): Perl, C++, C, SQL, unix shells
- Experienced: JavaScript, Java, Tcl/Tk, Visual Basic, Lisp, Python, Delphi, Clipper
- 10 years experience in free software: Linux, Gnu, Debian (management of a 120 machine network, and a self-written central installation and configuration tool),
- Notable experience: Mozilla platform (xul, javascript), Win32 API, Postgresql database backend (I have my two lines in it :)), Mason (<http://www.masonhq.org>) web-template system, OpenGL.

## Employment, contract work

2007 Mozilla Firefox extension development for QuickBrowse Inc.  
2006,2007 AGIS Allianz Dresdner Informationssysteme GmbH, Windows and Unix systems programmer  
2003- System administration and development for the 200 workstation network of the Institute of Mathematics at ELTE  
1994- Contract work implementing and maintaining custom accounting and billing software for a government owned company renting social apartments in the XXth district of Budapest

## Notable projects

- **Patching a Windows GINA to establish VPN automatically (2007)**

**Status:** Windows and Unix systems programmer, AGIS Allianz Dresdner Informationssysteme GmbH

**Job:** The company has a proprietary GINA that is capable of using its own DAP servers for windows authentication. My job was to patch this GINA to respond to SmartCard events, and automatically establish VPN connection if the user logs in outside the corporate network.

**Language:** C

- **Upgrade and management of a 200 machine diverse university network (2004-)**

**Status:** Lead system administrator at the Mathematics Institute, ELTE. 120 linux, 80 windows machines, and 2 employees working under my guidance.

**Job:** Upgrade the 10 year old software environment while all the old and locally well-known or even modified applications continue to function.

**Solution:** Development of a template-driven central configuration system that is capable to reinstall the clients

**Languages, tools:** Perl, unix shell script, C, ssh port forwarding, rsync

- **Graph layout and visualization software (2003)**

**Link:** <http://glay.sourceforge.net>

**Job:** layout and visualization of graphs arisen in the biological networks research at Notre Dame University.

**Solution:** Development of the [Glay](#) graph manipulating and visualizing system.

**Languages, technologies:** C++, Perl, OpenGL, Tcl/Tk

**Result:** Our research resulted in an article, the visualization made with Glay becoming a cover-page picture of Nature magazine:

<http://www.nature.com/nature/journal/v427/n6977/index.html>

- **Portal engine and design of <http://www.cs.elte.hu> (2005)**

**Job:** Create a portal that overtakes the old one step-by-step, allowing the organization and discovery of information cumulated in 10 years without braking anything.

**Solution:** A new portal engine, utilizing the Mason framework.

**Languages, technologies:** Perl, Mason, Linux-PAM

- **Graph visualization with a GIS system (2005)**

**Status:** PhD student at ELTE

**Goal:** Visualize a European subnet of the Internet on a geographical map, and visualize some physics measurement data on that.

**Solution:** Using Mapserver (<http://mapserver.gis.umn.edu/>) and NASA BlueMarble data, writing a framework for geographical graph visualization.

**Notable:** Needed to find and correct the algorithmic efficiency problem in Mapserver that slowed down the visualization of graphs with thousands of edges

([http://mapserver.gis.umn.edu/bugs/show\\_bug.cgi?id=1432](http://mapserver.gis.umn.edu/bugs/show_bug.cgi?id=1432)).

- **Development and support of a billing system (1994-)**

**Job:** A company owned an old, binary billing system that kept its data in (poorly) encrypted files. Neither the author, nor the source were available. My task was to crack the database, get the data, and rewrite the billing system.

**Solution:** Writing a billing system in Clipper (it was 1994). Ten years later, I received an order to reimplement the whole system again since the company expanded. That time I've chosen postgresql+mason.

- **Research related software development (2000)**

Research project on estimating the size and shape of free volumes in simulated amorph material. Supervisor: András Böhöneyei at ELTE, Physics Department.

### **Prizes**

- 2000 ACM International Problem Solving Contest. University level: 1., central european level: 13.
- 1996 XXVII. Physics olimpiad, 3rd prize (27. place)
- 1996 Physics, National Secondary School Competition, 5. place
- 1995 Physics, National Secondary School Competition, 4. place

### **Research**

- 2004 – As a PhD student, learned about GIS and used it for network visualization
- 2003 – 2004 Worked on biological networks research at the Biological Physics Department of ELTE, while doing lots of postprocessing work for the article on the work of the previous year
- 2001. okt. – 2002. nov. Participated in the work of the Networks Research Group at Notre Dame University, developing methods for analyzing metabolic networks

### **Publication list**

E. Almaas, B. Kovács, T. Vicsek, Z. N. Oltvai and A.-L. Barabási: Global organization of metabolic fluxes in the bacterium *Escherichia coli*, *Nature*, 427, 839-843(26 February 2004)