



Central European Centre  
for Women and Youth in Science



**PASCAL**

Pattern Analysis, Statistical Modelling and  
Computational Learning

# Promoting Women in Science

**Dunja Mladenić**

**J. Stefan Institute, Slovenia**

# Background

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- ETAN (European Technology Assessment Network), an expert group on women in science set up by EC in 1998
  - members from ten Member States of the European Union (Belgium, Denmark, Finland, France, Germany, Great Britain, Italy, the Netherlands, Spain and Sweden)
  - reported on position of women in science in the European Union primarily in Western Europe
- Helsinki Group on women and science, set up by EC in 1999
  - official representatives from 32 countries, mostly Member States of EU
  - national reports discussing national policies on promoting women in science in the involved countries
  - reported not very favourable situation of women in research and development overall
  - lack of proper sex-disaggregated statistics and of harmonised data
- Enwise Expert Group set up by EC in 2002
  - members from Central and Eastern Europe and the Baltic States
  - reports on women scientist often having under-funded position within the scientific community, a double burden in maintaining a satisfactory work-life balance and an implicit expectation that all hindrances form part of the private sphere without any public recognition

## (some) Enwise recommendations

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- National educational **policies** have to pay special attention to creating a general approach supporting gender mainstreaming from elementary school to higher education.
- At **universities and scientific institutions** a department or a person has to be appointed responsible for supporting “women and science” issues and implementing employment policies focusing on equal opportunities.
- **Media** has to improve its picture of science and conduct awareness raising campaigns in the Enwise countries. The general picture has to be more attractive for women and the younger generation.
- CEC-WYS inspired by the Enwise report and putting the Enwise recommendations in specific conditions of each country participating in the project

# CEC-WYS mission statement

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Central European Centre for Women and Youth in Science

- Aims at promoting: gender equality in R&D and young scientists in the Central Europe
- To advance the position of women scientists and of young scientists in Central Europe
- User-friendly website, workshops/trainings
- Database of women experts from the Central Europe (increasing participation of women scientists in European research and the EC expert database)
- Promotion of women in science – influenced other FP6 projects (SSA WS DEBATE, NoE PASCAL)

# Overall objective

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- Stimulation of policy and wider public debate on the situation and perspectives of women in science
- Bridge the gap between policy developments and public understanding of the related issues
- Raise gender awareness among policy makers, scientists, as well as among the lay public interested in scientific developments

# Measurable objectives



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- Publishing 5 national reports
    - updated Enwise reports on the situation of women in science in the partner countries (Czech Republic, Hungary, Poland, Slovakia, Slovenia)
  - National conferences on the report and related issues
    - organizing 5 conferences one in each country in Slovenia to be in May/June 2008!!!

# Promotion activities



- **Travelling exhibition** of Slovenian Women in ICT (in Slovenian) and virtual exhibition
- **Brochures**
  - promoting research and personal experience of women with PhD from Slovenian Universities in Computer Science, Electrical Engineering, Mechanical Engineering and Mathematics and virtual exhibition (Slovenian, English)
- **Promoting women in ICT of NoE establishing a Europe-wide distributed institute** which pioneer principled methods of pattern analysis, statistical modelling and computational learning (English)

http://kt.ijs.si/dunja/CEC-WYS/SloveniaICTPhD/

Institut

## informatike v Sloveniji

**WS Debate**

**Na Institutu "Jožef Stefan" smo v sodelovanju s Srednjeevropskim centrom za ženske in mlade v znanosti pripravili razstavo Doktorice računalništva in informatike v Sloveniji. S to razstavo:**

- želimo povedati, da delo v znanosti resda zahteva stalen študij raziskovanje, vendar je tudi zabavno in izpolnjujoče;
- želimo pokazati, da tudi v računalništvu in informatiki ženske dosežejo najvišjo stopnjo izobrazbe in s tem posledično vodilna delovna mesta;
- poskušamo razbiti stereotip, da je računalništvo in informatika študijska usmeritev in poklic, v katerih se lahko uspešno uveljavijo samo moški;
- želimo pokazati, da ob zahtevnem delu v znanosti ostaja čas tudi družini, prijateljem in konjičkam;
- izpostavljamo nekatere težave, s katerimi se pri nas srečujejo ženske v znanosti.

**K sodelovanju smo povabili vse doktorice računalništva in informatike, ki so doktorirale na Univerzi v Ljubljani in Univerzi v Mariboru.**

**Do začetka leta 2006, je iz računalništva in informatike na Univerzi v Ljubljani doktoriralo 17 žensk od skupaj 87, na Univerzi v Mariboru pa 6 žensk od skupaj 47 doktorjev.**

*Odprte razstave je bilo 18. 4. 2006 ob 15.00 v avli Instituta "Jožef Stefan".*

*Razstava je "potujoča" in gostuje po fakultetah, institutih, vladnih ustanovah, kako o svojem poklicu in o tem, kako je biti ženska v znanosti v Sloveniji.*

*Razstava gostuje:*

- 28.5. do 18.6. 2007 - Univerza v Ljubljani
- 6.6. 2007 - Cankarjev dom, Ljubljana (ob dogodku Dialog civilitet)
- 18.6. do 2.7. 2007 - Študentska organizacija univerze v Ljubljani
- 2.7. do 13.7. 2007 - Pedagoška Fakulteta, Univerza v Ljubljani

[Predhodna gostovanja razstave](#)

Umetna inteligenca - Windows Internet Explorer



http://kt.ijs.si/dunja/CEC-WYS/SloveniaICTPhD/mladenic.htm

Helsinki EC women science

Umetna inteligenca

## Umetna inteligenca

dr. Dunja Mladenič



Na Institutu "Jožef Stefan" sodelujem od leta 1987, ko sem začela pisati diplomsko delo s področja strojnega učenja. Delo sem nadaljevala z razvojem sistemov in aplikacij za odkrivanje zakonitosti v podatkih, ki združuje raziskovalno in razvojno delo na zelo zanimivih problemih. Na teh tematikah sem tudi magistrirala in doktorirala. Nekaj let sem bila na strokovnem usposabljanju v ZDA. Sem predstavnica Slovenije v strokovni skupini Evropske komisije (Enwise – Promocija znanstvenic iz držav srednje in vzhodne Evrope ter Baltskih držav), avtorica znanstvenih prispevkov in soavtorica znanstvenih knjig. V nadaljevanju bom naštel nekaj zanimivih raziskovalnih problemov, pri katerih sem sodelovala. Prvi tak primer je bil napovedovanje izbruhov epidemij z analiziranjem različnih virov podatkov, kot so izostanki dijakov iz šol, zapisi diagnoz iz ambulant za prvo pomoč, podatki o nakupih v samopostrežnih trgovinah in vprašanja s spletnih iskalnikov. Drug zanimiv problem je bilo profiliranje uporabnikov svetovnega spleta, kjer smo gradili modele interesov uporabnikov svetovnega spleta, na osnovi katerih je program avtomatsko priporočal uporabniku zanimive spletne strani. Ukvarjala sem se tudi z analizo spletnih novic in opazovala profile držav, znanih oseb ali podjetij skozi čas. Zelo zanimiv primer je bila aplikacija za pomoč mladim sodnikom pri reševanju sodnih primerov z iskanjem semantično podobnih primerov iz preteklih sodnih obravnav. V zadnjem času se ukvarjamo tudi z analizo znanstvenega sodelovanja organizacij, skupin, posameznikov in držav na osnovi preteklega in tekočega sodelovanja na mednarodnih projektih. V teh raziskavah skušamo s sodobnimi metodami strojnega učenja identificirati aktivne posameznike ali skupine, uspešne konzorcije in ključne predstavnike – nosilce razvoja na posameznih raziskovalnih tematikah. Na koncu naj se pohvalim še, da je zaradi znanstvene relevantnosti in mednarodne prepoznavnosti znanstvenega dela naše skupine sodelovanje na domačih in mednarodnih projektih postalo ena pomembnejših komponent mojeg dela. K motivaciji prispevajo tudi redna vabila k sodelovanju pri organizaciji priznanih mednarodnih dogodkov in v uredniških odborih mednarodnih znanstvenih revij.



"Jožef Ste  
Central Eur  
for Women and

### Women with PhDs in Computer Engineering, Mechanical Engineering and Mathematics in Slovenia

At the Jožef Stefan Institute we have prepared a project on PhD in Computer and Information Science organized in co-operation with the Central European Science we want to:

- say that scientific work may indeed be fun and fulfilling;
- show that women also can achieve in traditionally male addressed area and through this also break the stereotype that in the addressed area is not successful;
- show that despite the fact that science is not always a full-time job for family, friends and hobbies
- point out some problems with which women in science.

The project was prepared by:

- Dunja Mladenič - project outline and content realization
- Darja Brodnik - content realization
- Dalija Segar - artistic concept and design

We would like to thank to:

- Participating women
- Department of Knowledge Technology at the Jožef Stefan Institute
- European Commission
- Slovenian Commission for Strengthening the Ministry of Higher Education
- ABM Design



## dr. Mojca Noč Razinger



"Women and mechanical engineering - how do they match up?" people wonder when I answer the question about my occupation. Someone once even said that being a mechanical engineer means being covered with grease and oil up to the elbows. From my experience I can say that this, of course, is not true. If I had to make a decision about my professional career again, I would not change anything.

Already as a little girl I often helped my father with household repairs and as I was growing up my interest in engineering was growing stronger and stronger. The programme at my secondary school was focused on natural sciences and mathematics and afterwards I found it very hard to decide for a single study programme - if that had been possible, I would have enrolled for courses at three faculties at the same time: the Faculty of Mechanical Engineering, the Faculty of Electrical Engineering and the Faculty of Computer and Information Science. As this could not be carried out in practice, I chose mechanical engineering and in the third year I decided to specialise in mechatronics. Later on I primarily focused on developing programs for numerically controlled machines and on improving computer-controlled processes on-line during the cutting process on a machine.

Heavy labour and dirty hands are in modern mechanical engineering more or less part of the past as all of this has been transferred to the machines or it can be avoided with the help of different devices. What is more, a special kind of relationship between people and machines has started to develop. This is mainly due to the fact that machines are very close to becoming equal partners and they are taking over some of the tasks which are very important to us. Through this we ourselves and our self-image are changing as well.

My research activities never required work which was considered hard and inappropriate for women. The machine was always operated by an operator. I, on the other hand, was responsible for the measurements, the measuring instruments and the computer. The work crew was really something special and I have very fond memories of those days.

From process optimisation, with which I dealt in predominantly male working environment, I transferred to statistics. I must say I needed quite some time to adjust to this change, but now I have realised that mixed working environments are more productive and active as there are more different interactions between the colleagues and the problems are solved more quickly.

This variety of different activities and environments which is characteristic of my work poses the question how

# Women in PASCAL web site

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Goal: connecting and promoting the research area through contributing to visibility of women involved in PASCAL

Special section of PASCAL Web portal under “Network” entitled “Women in PASCAL

[http://www.pascal-network.org/Network/Women In PASCAL/](http://www.pascal-network.org/Network/Women%20In%20PASCAL/)

- Statistics for progress monitoring
- Two regularly updated section: News and related Links

# About, Statistics



# PASCAL

Pattern Analysis, Statistical Modelling and Computational Learning

Network Programmes Brokerage  
Challenges SIGs Calendar

Sites Statistics Research

About Researchers

We are all aware of the most of the researchers can think of. The percentage of female researchers in PASCAL is 40%. The gender dimension was a key element of the Integration Programme of the European Commission.

Network Programmes Brokerage Publications Reports Video Lectures Thematic Workshops  
Pump Prime Challenges SIGs Calendar FAQ My PASCAL Forge Executive Associate Members

## PASCAL Network

Sites Statistics Researchers By Interests Women In PASCAL

About Researchers By Interests News Statistics Links

### Gender Statistics of Researchers in PASCAL

#### Year 2006

Overall PASCAL Members	645
Female Researchers	40
Male Researchers	285
Female Students	50
Male Students	270

#### Year 2005

# News and Links



# PASCAL

Pattern Analysis, Statistical Modelling and Computational Learning

Network Programmes  
Challenges SIGs Cal

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Challenges SIGs Calendar FAQ My PASCAL Forge Executive Associate Members

## PASCAL Network

Sites Statistics  
About Research

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### Links Related to Women in ICT

**WOMEN'S CAREERS AND ICT:** Frequently Asked Questions.

**A WOMAN, IN SEARCH** A link to the story of the 10-year veteran of the search engine marketing industry (generally referred to as "Search"), I am also a woman in constant search of ways to grow, to challenge the constraints of convention, and to be fully alive, conscious, attuned, and informed in the process. I've learned that viewing life through this lens automatically puts me in the minority. And that being a woman (and business owner) in a technology-related field only adds spice to an already saucy, sassy brew.

**LINUXCHIX** LinuxChix is a community for women who like Linux and Free Software, and for women and men who want to support women in computing. The membership ranges from novices to experienced users, and includes professional and amateur programmers, system administrators and technical writers.

**CHANGING GIRLS' ATTITUDES TOWARD COMPUTERS** Karen Ellis's rich resource, Educational CyberPlayGround, has devoted a special section to resources designed to get girls excited about computers and information technology. Here you'll find information about women who were/are computer pioneers; projects aimed at interesting girls in technology; links to sites dealing with the gender divide and the digital divide; gender equity resources; and links to best online resources for women and minorities in science and tech.

**THE GOOGLE EUR** and technology tl  
Master's, and PhD  
finalists, will each

**CWIT SCHOLARS**  
Baltimore County  
program for taler  
related program a

**THE CCWESTT C**  
industry repres  
career-life balan  
enhance diversity

# Women in PASCAL web site cont.

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- Mailing lists of women (researchers, students) in PASCAL
- Presentations of women in PASCAL
  1. Provided as response to our call
  2. Automatically generated from member profiles that were extended with two questions:
    - Why did you choose a career in science, and your research field?
    - How would you encourage students to pursue a research career in your field?

# Women in PASCAL



## Michele Sebag

My expertise is in Relational Machine Learning and Stochastic Optimisation. Machine Learning in relational domains (such as chemistry, traffic, games) raises specific difficulties, due to the fact that the covering test (checking whether a relational hypothesis covers an example) is equivalent to a Constraint Satisfaction problem - with exponential worst-case complexity. I have worked in Inductive Logic Programming (won the Predictive Toxicology Challenge, IJCAI 1999), using stochastic heuristics to overcome the above complexity issue. Last application: finding test cases in statistical software testing (IJCAI 2007). Optimisation follows quite naturally Learning: after you've learned to characterize, say the failures of some industrial process, the expert is willing to tune the process in order to minimise the failure rate. I have worked on ill-posed optimisation problems, e.g. non-parametric identification of models (applications in numerical engineering) using Evolutionary Optimization techniques, specifically Evolution Strategies and Estimation of Distribution Algorithms. Last application: detection of active areas of the brain from MEG Data (IJCAI 2005).

With a background in maths (Ecole Normale Supérieure, agregation of Mathematics), I went to industry (Thomson-CSF) where I started to learn about computer science, project management, and Artificial Intelligence. I got really interested in AI, became Consulting Engineer, and realized that Machine Learning was something to be. I was offered the opportunity to start research on Machine Learning for applications in Mechanics of Solids (LMS, Ecole Polytechnique). I passed my PhD in between Machine Learning (LRI, Université Paris-11 Orsay), Data Analysis (CEREMADE, Université Paris-10 Dauphine) and Mechanics (LMS, Ecole Polytechnique), and I entered CNRS (CR1, 1991). I passed my Habilitation in 1997, and I am now Senior Researcher (directrice de recherche) CNRS. Grounded in Numerical Engineering applications, my first interest was in Machine Learning: robust attribute-value learners, learning redundant rules, bias-light learning, learning similarities and case-based reasoning, building disjunctive version spaces and ARCING (applications in failure

# ...to conclude



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WS DEBATE organizing Slovenian National workshop in May/June 2008

“Fenomen ustvarjalne ženske v znanosti in javnem življenju” (Creative women in science and public life)

- Topics: women in politics, women in science and culture, women in management

## Welcome!

for registration to WS DEBATE workshop contact  
[tina.anzic@ijs.si](mailto:tina.anzic@ijs.si)