

# Natallia V. Katenka

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## Education

**09/2004-**                      **Ph.D. in Statistics**, The University of Michigan, Ann Arbor  
(expected **04/2009**)              Advisors: Elizaveta Levina and George Michailidis  
**09/2004-04/2007**              **M.A. in Statistics**    The University of Michigan, Ann Arbor  
**09/1999-06/2004**              **M.S. in Applied Math and Computer Science**  
Belarusian State University, Minsk, Belarus

## Research Interests

- Wireless Sensor Networks (Target Detection, Localization, Tracking and Diagnostic)
- Multivariate Data Analysis, Pattern Recognition
- Functional Data Analysis, Graph Optimization

## Academic Papers

- [1] N. Katenka, E. Levina, and G. Michailidis (2007). "A Cost-Efficient Approach to Wireless Sensor Network Design," (Submitted to IEEE Transactions on Parallel and Distributed Systems).  
[2] N. Katenka, E. Levina, and G. Michailidis (2007). "Robust Target Localization from Binary Decisions," (Revised for Technometrics).  
[3] N. Katenka, E. Levina, and G. Michailidis (2008). "Local Vote Decision Fusion for Target Detection in Wireless Sensor Networks", IEEE Transactions on Signal Processing, vol. 56(1), pp. 329 - 335.

## Awards, Honors, Scholarships, Fellowships

**June 2006**                      **Awarded conference scholarship at** Joint Research Conference on Statistics in Quality, Industry and Technology, Knoxville, Tennessee.

**September 2004**              **Statistics Department first-year fellowship, The University of Michigan, Ann Arbor, Michigan.**

**April 2004**                      **Awarded conference scholarship at** International Conference on Modelling and Simulation, General applications and Systems/ Intelligent technologies, Faculty of Applied Mathematic and Computer Science, Minsk, Belarus.

**June 2004**                      **Diploma with Honors** Belarusian State University, Minsk, Belarus.

**September 1999**              **5-year full scholarship**, Belarusian State University, Minsk, Belarus

**June 1999**                      Lyceum of Belarusian State University, **Hight School Diploma with Honors (Silver Medal).**

## Memberships

IEEE(Institute of Electrical and Electronics Engineers) Graduate Student Member

ASA(American Statistical Association) Graduate Student Member

## Academic Presentations

- January 2008** Invited Poster Presentation, The Opening Workshop of the SAMSI program on Environmental Sensor Networks, Research Triangle, North Carolina
- June 2007** Presentation, Rackham Interdisciplinary Workshop on Statistical Topics, Ann Arbor, Michigan
- March 2007** Poster Presentation. MSSISS (Michigan Student Symposium for Interdisciplinary Statistical Sciences 2007), Ann Arbor, Michigan
- January 2007** Graduate student participant at Mathematical Challenges and Opportunities in Sensor Networking Workshop, Institute of Pure and Applied Mathematics ( IPAM), UCLA, Los Angeles, California
- June 2006** Invited talk, Joint Research Conference on Statistics in Quality, Industry and Technology, Knoxville, Tennessee.
- April 2004** Presentation. International Conference on Modelling and Simulation, General applications and Systems/ Intelligent technologies, Faculty of Applied Mathematic and Computer Science, Belarussian State University, Minsk, Belarus.

## Research Experience

- Spring 2007** [Statistics Department, University of Michigan-Ann Arbor](#)  
Research Assistant: explored the problem of the wireless sensor network cost minimization subject to the area coverage and sensor connectivity. Studied approaches to adaptive sensor scheduling and target tracking in a wireless sensor network (WSN). Results are summarized in [1].
- Summer 2006** [Statistics Department, University of Michigan-Ann Arbor](#)  
Research Assistant : explored the problems of identifying the location of a target and estimating its signal by a wireless sensor network (WSN). Partially results are summarized in publications [2] and [3].
- Winter 2003** [National Academy of Science of Belarus, THE INSTITUTE FOR PROBLEMS](#)  
**Summer 2004** [OF NATURAL RESOURCES USE AND ECOLOGY](#) (Minsk, Belarus)  
Research Assistant: conducting research on national resource consumption. Responsibilities included: performing mathematical modeling, testing software, sampling analysis, data summary, result interpretation, and reporting. Participation in science project for BelTransGaz (government gas supply company).

## Teaching Experience

- Fall 2007,  
Winter 2007**      [Statistics Department, University of Michigan-Ann Arbor](#)  
Graduate Student Instructor (GSI) for Stat 503 (Applied Multivariate Analysis ). Responsibilities included grading of the bi-weekly assignments, proctoring exams, holding office hours, providing the code and help (R, Ggobi), format datasets (XML).
- Winter 2008,  
Fall 2006,  
Winter 2006,  
Fall 2005**      Statistics Department, University of Michigan-Ann Arbor  
Graduate Student Instructor (GSI) for Stat 350 (Introduction to Statistic and Data Analysis): responsibilities included teaching weekly labs (review statistical and data analysis concepts, discuss problems and solutions, introduce students to a computer program for statistical data analysis (SPSS), plan and prepare handouts, quizzes, and homework solutions, incorporate new clicker Qwizdom technology), grading weekly assignments, proctoring and grading of exams, holding office hours.
- Winter 2005,  
Fall 2004**      Statistics Department, University of Michigan-Ann Arbor  
Graduate Student Instructor (GSI) for Stat 412 (Probability and Statistics for Engineering and the Sciences): Responsibilities included grading of weekly assignments, proctoring and grading of exams, holding office hours.

## Mentoring

- Fall 2002 -  
Summer 2004**      [Belarusian State University \(BSU\), Minsk, Belarus](#)  
Graduate Student Mentoring: while being a senior and a master level student at BSU provided mentoring for undergraduate students in the Department of Applied Mathematics and Computer Science. The program was designed to help undergraduates learn first-hand about selecting future specialization, as well as how to prepare for and apply to internships and graduate school. Responsibilities also included: planning the class and exam schedule in the department, attending department weekly meetings, organizing social and sport events.

## Professional Experience

- Summer 2007**      [Inter-University Consortium for Political and Social Research \(ICPSR\) \(MI, USA\)](#)  
Computing Consultant: provided user support for a variety of statistical and related software packages(R,SAS,STATA,SPSS,Latex,etc.); assisted instructors with computer hardware and software inclassroom set-up, performed basic maintenance of the computing facilities.(Contact: Edward J. Czilli, <mailto:ejczilli@umich.edu>)
- Summer 2005**      Statistical Analysis and Reporting (StAR) Department, Development Operations, [PFIZER, Inc.](#) (Ann Arbor,MI, USA)  
Statistical Programmer/Analyst: developed a set of scrips (PERL) and reference

manual for a departmental Workload Assessment Process (WAP); created database (MS Access / VB) for Ann Arbor's Local Data Standard training organization; performed a Quality Check service, data mapping, statistical programming in clinical trials (SAS), and reporting. Attended Pfizer Research University (PRU) "From Molecule to Medicine" workshop. (Contacts: Associate Director Chris Hurley [chris.hurley@pfizer.com](mailto:chris.hurley@pfizer.com))

- Fall 2003-  
Summer 2004** Software Quality Assurance (SQA) Department, [BelHard Group](#). (Minsk, Belarus)  
SQA Engineer: took part in QA process for Commercial/Financial software ([Kyriba](#)) performed test automation process modeling, design, test implementation (Java, VBasic), data summary, results interpretation, and reporting; used Rational Unified Process (RUP) framework and Rational testing tools, as well as sampling techniques, and various statistical methods. (CEO Igor Mamonenko, [belhard@belhard.com](mailto:belhard@belhard.com))
- Summer 2003** Biostatistics Department, [STATPROBE, Inc.](#) (Columbus, OH, USA)  
Statistician: took part in statistical document preparation for clinical trials (phase II, phase III, both for safety (ISS) and efficacy (ISE)), performed modeling, sampling analysis, statistical programming (SAS, SPSS, etc.), table validation, data mapping, data summary, results interpretation, and reporting.  
(Contact: Associate Director Terry Sharp, <mailto:terry.sharp@co.statprobe.com>)
- Summer 2002** Department of Strategic Planning and Analysis, [MPZ](#) (Minsk, Belarus)  
Programmer/Analyst: performed database management (MS Access, SQL), programming (C++, Delphi, VBasic, etc.), data summary (Mathematica, Statistica, etc.), and reporting.

## Computing Skills

Operating Systems: Windows 95/98, Windows NT/2000/XP Professional, Unix, Linux, DOS

Programming Languages: SQL+, Java, Perl, C/ C++, Pascal, HTML, Assembler, Octave, XML

Statistical and Mathematics Software: SAS, R\S-Plus, SPSS, Matlab, Mathematica Surfer, Ggobi, GenMap

Others: Putty, Latex, Rational XDE Tester, Rational Test Manager, Rational Clear Case, Microsoft Office, Microsoft Access, Microsoft Project, Oracle, Rational Rose, Adobe Photoshop, Corel Draw

**Languages**: English, Russian

## Advisors Contact Information

**George Michailidis**, Associate Professor  
Graduate and Associate Chair  
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