

ROBERTAS GABRYS
Curriculum Vitae

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CONTACT INFORMATION

Department of Data Science and Operations
University of Southern California
Bridge Hall -BRI 401 O
Los Angeles, CA 90089 – 0809

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EDUCATION

- Ph.D.** Statistics (GPA 4.0) 2006 – 2010
Utah State University, Logan, UT, USA
Dissertation title: *Goodness-of-fit and change-point tests for functional data*
Academic advisor: Dr. Piotr S. Kokoszka
- M.S.** Applied Mathematics (Finance and Insurance emphasis) 2003 – 2005
Vilnius University, Vilnius, Lithuania
Thesis title: *Market index investigation using functional data analysis tools*
Academic advisor: Dr. Alfredas Rackauskas
- B.A.**(CUM LAUDE) Applied Mathematics (Finance and Insurance emphasis) 1999 – 2003
Vilnius University, Vilnius, Lithuania
Thesis title: *Value at risk*
Academic advisor: Dr. Alfredas Rackauskas

EMPLOYMENT

- Chief Data Scientist 2016 - now
Data Analysis Experts
- Professor of Data Science in Residence 2016 – 2017
Cisco, San Jose, CA
- Assistant Professor of Clinical Data Science and Operations 2010 – now
University of Southern California, Los Angeles, CA
- Teaching/Research Assistant 2006
– 2010
Utah State University, Logan, UT
- Actuary 2003 – 2005
UAB SEB VB Life Insurance, Vilnius, Lithuania

RESEARCH ACTIVITY

Accepted/Published Articles:

1. Gabrys, R., Hörmann, Z., and Kokoszka, P. *Monitoring the intraday volatility pattern*, Journal of Time Series Econometrics, 5, 87–116, 2013
2. Gabrys, R., Horvath, L., Kokoszka, P. *Tests for error correlation in the fully functional linear model*, Journal of the American Statistical Association, 105, 1113–1125, 2010
3. Berkes, I., Gabrys, R., Horvath, L., Kokoszka, P. *Detecting changes in the mean of functional observations*, Journal of the Royal Statistical Society, B, 71, 927–946, 2009
4. Aue, A., Gabrys, R., Horvath, L., Kokoszka, P. *Estimation of a change-point in the mean function of functional data*, Journal of Multivariate Analysis, 100, 2254–2269, 2009
5. Gabrys, R. and Kokoszka, P. *Portmanteau test of independence for functional observations*, Journal of the American Statistical Association, 102, 1338–1348, 2007
6. Gabrys, R., Kokoszka, P. and Zhang, A. *Discriminating between long memory and volatility shifts*, Austrian Journal of Statistics, 36, 253–275, 2007

Technical Reports and other academic activity:

1. Gabrys, R., Kirshtein, J., Kumar, N., Yang, H., Zhou, K., and Zuo, J. *Stress tests of risk bearing enterprises*, Center for Research in Scientific Computation, Raleigh, NC, Statistical and Applied Mathematical Sciences Institute (SAMSI), RTP, NC, 2009
2. Gabrys, R., Geng, W., Koskodan, R., Li, J., Owens, L., Wu, Q., and Zuo, M. *Optimal implied views for skewed return distributions*, Center for Research in Scientific Computation, Raleigh, NC, Statistical and Applied Mathematical Sciences Institute (SAMSI), RTP, NC, 2006
3. Assisted with computations in various sections in *Inference for Functional Data with Applications* by Horvath, L., and Kokoszka, P., Springer, 2012

RESEARCH INTERESTS

- Big Data Analytics
- Machine learning
- Business Intelligence
- Data mining
- Econometrics
- Functional data analysis and applications
- Statistical computing and visualization
- Actuarial mathematics
- Time series techniques for forecasting
- Wavelet methods in time series analysis
- Applications in environmental sciences, financial econometrics, actuarial mathematics, space physics

TEACHING EXPERIENCE

Courses Taught:

Undergraduate courses:

- Applied Business Statistics
- Data Analysis for Decision Making
- Business Forecasting
- Introduction to Statistics
- Introduction to Logics and Geometry
- Business Statistics
- Statistical Methods
- Statistics for Scientists
- Linear Algebra and Differential Equations
- Calculus

Graduate courses:

- Foundations of Statistical Inference
- Statistics Review for Business PhD Students
- Managerial Statistics
- Advanced Regression Analysis
- Applied Time Series Analysis for Forecasting
- Applied Modern Statistical Learning Techniques
- Essentials of Data Analysis and Modeling
- Data Visualization and Computing

PROFESSIONAL SERVICE

Journal Referee:

- Journal of American Statistical Association
- Biometrika
- Journal of Multivariate Analysis
- Statistical Modeling: An International Journal
- Computational Statistics and Data Analysis
- Statistics
- Scandinavian Journal of Statistics
- Statistical Analysis and Data Mining

Consulting Experience:

- Mortgage Rate Forecasting 2017
- Data Science Projects Consulting 2016
– 2017
Cisco, San Jose, CA
- Predictive modeling for clinical procedures 2015
Kaiser Permanente and USC
- Workers compensation data mining 2015
LA City and USC
- Data analysis of traffic collision and traffic engineering data with other analytic factors 2015
LA City and USC
- Performed quantitative analysis on Vocabulary Learning Strategies of 2009
Korean ESL Readers
Intensive English Language Institute (Nolan J. Weil), Utah State University
- Assisted with reviewing an Asian EFL Journal manuscript 2009
Intensive English Language Institute (Nolan J. Weil), Utah State University
- Data analysis of traffic collision and traffic engineering data with other analytic factors 2014
USC/LA City

Committee Service:

- Coordinator of a BUAD core course(BUAD 425)
- Undergraduate Curriculum Committee
- IT Committee
- Fretitta Hall Instructional Committee

Faculty Adviser:

- Ascend
- UNICEF@USC
- Hospitality Industry Project

PROFESSIONAL CONFERENCES

Talks:

- Mortgage Rate Forecasting 2018
The 38th International Symposium on Forecasting
Boulder, Colorado
- Mortgage Rate Forecasting 2018
Vilnius Conference
Vilnius Lithuania

- *High-frequency time series analysis tools for forecasting* (Talk) 2016
The 36th International Symposium on Forecasting
Santander, Spain
- *Monitoring the intraday volatility pattern* (Invited talk) 2012
Statistical models for financial data III
Department of Statistics, Graz University of Technology, Graz, Austria
- *Goodness of fit and change point tests for functional data* (Invited talk) 2012
Mathematics Department, University of Utah
- *Change point tests for functional data* (Invited talk) 2012
Institute of Mathematics and Computer Science, Vilnius, Lithuania
- *Monitoring the intraday volatility pattern* (Invited talk) 2012
Department of Mathematics and Computer Science, Vilnius University
- *Monitoring the Structural Change of the Intraday Volatility Pattern* (Invited talk) 2011
2011 Joint Statistical Meetings, Miami, Florida
- *Recent advances in FDA: off-line and on-line change point tests* (Invited talk) 2011
Inaugural Lecture in Interdisciplinary Interdepartmental Colloquium Lecture Series
on the Application of Statistics to Environmental Science and Business
University of Northern Texas, Denton, Texas
- *Monitoring the intraday volatility pattern* (Colloquium) 2011
Mathematics Department, University of Southern California
- *Monitoring the intraday volatility pattern* 2011
Applied Stochastic Models and Data Analysis
Faculty of Economics, "La Sapienza" University, Rome Italy
- *Detecting changes in the mean of functional observations* (Invited online talk) 2010
London School of Economics
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
University of Northern Michigan
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
University of Houston Downtown
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
Illinois State University
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
Oklahoma State University
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
University of Texas at Dallas
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
Syracuse University
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
University of Southern California

Robertas Gabrys CV

- *Detecting changes in the mean of functional observations* (Invited talk) 2010
Clemson University
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
University of South Carolina
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
Lehigh University
- *Detecting changes in the mean of functional observations* (Invited talk) 2010
North Carolina State University
- *Detecting changes in the mean of functional observations* (Invited talk) 2009
School of Public Health, Harvard University
- *Tests for error correlation in the functional linear model* (Contributed talk) 2009
Joint Statistical Meetings, Washington, DC
- *Stress tests of risk bearing enterprises* (Group presentation) 2009
Industrial Mathematical and Statistical Modeling Workshop for Graduate Students
Center for Research in Scientific Computation, Raleigh
NC Statistical and Applied Mathematical Sciences Institute (SAMSI), RTP, NC
- *Detecting changes in the mean of functional observations* (Contributed talk) 2008
Annual Spring Research Conference on Statistics in Industry and Technology
Georgia Institute of Technology, Atlanta, GA
- *Portmanteau and change-point tests for functional data* (Colloquium) 2007
Department of Mathematics and Informatics, Vilnius University, Lithuania
- *Portmanteau test of independence for functional observations* (Poster presentation) 2007
Joint Statistical Meetings, Salt Lake City, UT
- *Portmanteau test of independence for functional observations* (Contributed) 2007
Frontier Probability Days, Colorado Springs, CO
- *Optimal implied views for skewed return distributions* (Group presentation) 2006
Industrial Mathematical and Statistical Modeling Workshop for Graduate Students
Center for Research in Scientific Computation, Raleigh
NC Statistical and Applied Mathematical Sciences Institute (SAMSI), RTP, NC

Attended:

- Big Data LA 2019
Los Angeles, California
- 39th International Symposium on Forecasting 2019
Thessaloniki, Greece
- AWS Summit 2019
Chicago Illinois
- M4 Conference 2018
New York City, New York

- Big Data LA 2018
Los Angeles, California

- 12th International Vilnius Conference on Probability Theory 2018
and Mathematical Statistics and 2018 IMS Annual Meeting
on Probability and Statistics, Institute of mathematical statistics
Vilnius, Lithuania

- 38th International Symposium on Forecasting 2018
Boulder, Colorado

- Berkeley Data Science Forum 2017
UC Berkley

- *FORMAT Final Conference: Driving Innovation in Industrial Processes by
Technology Forecasting* 2015
Milan Italy

- *Second Workshop on ICT and Innovation Forecasting* 2015
ESSEC
Paris France

- *22nd Forecasting Financial Markets* 2015
Tampa, Florida

- *35th International Symposium on Forecasting* 2015
IIF
Riverside CA

- *2014 American Statistical Association Conference on Statistical Practice* 2014
American Statistical Association
Tampa, Florida

- *Statistics seminars* 2010 -
Present
Department of Data Science and Operations
University of Southern California
<http://www.marshall.usc.edu/faculty/iom/seminars>

- *Experiencing Mathematics (Workshop)* 2011
Pearson Arts and Sciences
California State University Northridge, Northridge

- *Exploring data visually (Workshop)* 2009
34th Annual Summer Institute of Applied Statistics
Brigham Young University, Provo, UT

- *Joint Statistical Meetings, Denver, CO* 2008

- *Functional data analysis (Workshop)* 2007
32nd Annual Summer Institute of Applied Statistics
Brigham Young University, Provo, UT

- *Workshop for actuaries: Life: financial modeling (Workshop)* 2005
SwissRe Insurance Training Center, Zurich, Switzerland

- *Modeling mortality dynamics for pensions and annuity business* 2005
Groupe Consultatif Actuariel Europeen
Summer School MIB School of Management, Trieste, Italy

COMPUTER SKILLS

- MS Office
- C, C++, Visual Basic, SQL
- Navision Financials, Hadoop, Hive
- R, Python, Splus, SPSS, SAS, JMP, Minitab, StatCrunch, XLminer
- Tableau, Maple, Matlab

HONORS/AWARDS/CERTIFICATIONS

- Management Development Program Certificate 2017
Marshall School of Business
University of Southern California
- Nominee for the Steven B. Sample Teaching and Mentoring Award 2011
USC Parents Association
- Excellence in Research Award 2010
Department of Mathematics and Statistics, Utah State University
- Dr. Dinesh and Kalpana Patel Doctoral Fellowship 2009 – 2010
School of Graduate Studies, Utah State University
- Graduate Researcher of the Year 2007
Department of Mathematics and Statistics, Utah State University
- SOA/CAS/CIA Exam P/1 2007
- Dean's List Award for Outstanding Scholastic Achievements 2006 – 2010
Utah State University
- Teaching Instructor Certificate (week long course) 2006
Utah State University
- B.S. Diploma Cum Laude 2003
Vilnius University
- University Scholarship for Outstanding Scholastic Achievements 1999 – 2005
Vilnius University

PROFESSIONAL MEMBERSHIPS

- American Statistical Association 2006– Present
- Institute of Mathematical Statistics 2006– Present
- International Institute of Forecasters 2014– Present

INDUSTRIAL WORK EXPERIENCE

Professor of Data Science in residence 2016 – 2017
Cisco, Silicon Valley

- Identified and participated in analytical solutions development for complex problems that impact the direction of the business
- Developed and delivered innovative strategies that benefit the Data Science Community, and strategic corporate goals
- Provided leadership to major business projects which impact the firm
- Contributed to the development of DSO organizational objectives/priorities
- Worked on significant and unique issues where analysis or data relies on an evaluation of intangibles
- Created and nurtured community-based people networks, facilitated coordination among groups and provided guidance to executive leadership
- Provided “Office Hours” support to the Cisco Data Science groups at Cisco to ensure the successful application of industry best practices in: statistical modeling, efficient and clean coding practices, Data Science experiment design and execution, data visualization and application of the CRISP-DM methodology
- Provided over-the-shoulder guidance during the development of analytical models
- Acted as the curator for a Corporate-level Data Science Knowledge Repository, which included code, analytical models and data visualization elements
- Highlighted Best Practices from industry and ensure they are implemented where appropriate during office hours, knowledge transfer sessions and in Data Science POD work
- Acted a senior consultant advisor during executive meetings for Data Science-aligned Corporate and Operations Architecture Strategic Priorities
- Delivered Knowledge Transfer Sessions to the Cisco Data Science Community which are focused on emerging, cutting-edge, powerful and Cisco-applicable tools processes and techniques from industry and academia
- Provided general support to the development of, and acted as a speaker for Data Science Expos and Symposiums
- Provided Design, Development and Judging support to Enterprise Data Science Office Data Science Competitions

- Periodically evaluated the Cisco Enterprise Analytics Toolbox according to industry best practices and provided recommendations for improvement via whitepaper

Actuary
UAB SEB VB Life Insurance, Vilnius Lithuania

2002 – 2005

- Developed and priced insurance products
- Calculated solvency margin
- Calculated technical provisions
- Computed surrender values
- Managed assets and liabilities
- Coordinated and administered reinsurance activity
- Created spreadsheets (for sales associates, actuarial control)
- Conducted premium recalculations in cases of alterations
- Prepared various reports within the company and to Insurance Supervisory Commission
- Performed various non-routine actuarial analyses of insurance activity and actuarial management

ACADEMIC TRAINING: RELEVANT COURSEWORK

(*) number of classroom hours

B.S.: Algebra (144*), Differential equations (192), Discrete mathematics (128), Physics (128), Analytical and differential geometry (112), Informatics (256), Mathematical analysis (415), Mathematical functional analysis (80), Mechanics (64), Methods of optimization (48), Numerical methods (128), Calculus of probability and mathematical statistics (128), Actuarial mathematics (96), Econometrics (48), Financial mathematics (48), Survival models (32), Mathematical programming (32), Microeconomics (32), Statistics of processes (48), Mathematical models for social phenomena (64), Statistic packets (32), Computer graphics in the internet (32), Mathematics for investments (96), Packets of optimization programs (32)

M.S.: Stochastic analysis (64), Sampling theory (48), Time series in finance (48), Probability theory and mathematical statistics (64), Supplementary chapters of mathematical analysis (64), Differential equation (64), Functional data analysis (32), Mathematical tutorial (80), Finance theory (96), Actuarial mathematics (96), Statistics (48), Macroeconomics (48), Informatics (96), Number theory (64)

Ph.D.: Wavelet methods in time series (Stat 7190), Mathematical statistics (Stat 6710 and 6720), Statistical learning (Stat 6650), Statistical computing (Stat 7550), Advanced regression methods (Stat 6100), Design of experiments (Stat 5200, audited), Categorical data analysis (Stat 5120, audited), Time series (Stat 6180), Biostatistics methods (Stat 5810, audited), Statistical bioinformatics (Stat 5570, audited)