

CV - Matúš Maciak

Resume, 2014

Personal Details

I

Full name: Matúš Maciak

Date/Place of Birth: 20th of June, 1982 Poprad, Slovak Republic

Citizenship: Slovak Republic Resident: Czech Republic

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Qualifications and Experience

II

Education History

2006 - 2011 Charles University in Prague, Czech Republic
Ph.D. in Probability and Mathematical Statistics

2007 - 2008 Universiteit Hasselt, Diepenbeek, Belgium
M.Sc. in Biostatistics

2001 - 2006 Charles University in Prague, Czech Republic
M.Sc. in Probability and Mathematical Statistics

Employment History

2012 - 2013 University of Alberta, Edmonton, AB, Canada.
(1.5 year post-doctoral fellow, Dept. of Math. and Stat. Sciences)

2010 - present T.G. Masaryk Water Research Institute, Prague, Czech Republic.
(chief statistician and analyst)

2010 - present Petit Press: SME Newspapers, Bratislava, Slovak Republic.
(online newspapers-blog administrator)

2007 - 2009 Charles University in Prague, Czech Republic.
(research and teaching assistant)

2006 - 2007 Colosseum a.s., Prague, Czech Republic.
(asset manager and analyst)

2004 - 2006 ETP Slovakia, Levoča, Slovak Republic.
(external statistical researcher and photographer)

2004 - 2005 The Boston Consulting Group, Prague, Czech Republic.
(statistical researcher and data collector)

2003 - 2007 Individual Building Contractor, PA & WA, USA.
(each summer a two-month summer job position)

1997 - 2001 Tourist Information Agency, Levoča, Slovakia.
(salesman & tourist guide - summer job)

Papers on Statistical Methodology (published)

- Maciak, M. (2010). Bootstrapping of M-smoothers.
Acta Universitatis Carolinae - Mathematica et Physica, Vol.52, No.1, 37–46.
- Maciak, M. (2009). Spline Models with Change-points. In Antoch, J. and Dohnal, G., editors, *Robust 2008 Conference Proceedings*, 239-246, JČMF, Prague.
- Maciak, M. (2007). M-smoothers in Testing and Estimating. In Šafránková, J. and Pavlů, J., editors, *WDS'07 Proceedings of Contributed Papers [Part I]: Mathematics and Computer Sciences*, 169-174. MatfyzPress, Prague.

Collaborative Papers (published & submitted)

- Slavík, O., Horký, P. and Maciak, M. (2014). Familiarity and Prior Residency Decrease the Movement Activity of the European Catfish.
Behavioral Processes, submitted.
- Horký, P., Douda, K., Maciak, M., Závorka, L. and Slavík, O. (2014). Parasite-induced alterations of host behaviour in a riverine fish: the effects of glochidia on host dispersal.
Freshwater Biology, (in press).
- Kadlecová, K., Bílý, M. and Maciak, M. (2012). Movement Patterns of the Co-occurring Species *Astacus Astacus* (Noble Crayfish) and *Austropotamobius Torrentium* (stone crayfish). *Fundamental and Applied Limnology/Archiv für Hydrobiologie*, 180, 351-360.
- Slavík, O., Maciak, M. and Horký, P. (2012). Shelter Use of Familiar and Unfamiliar Groups of Juvenile European Catfish *Silurus Glanis*. *Applied Animal Behaviour Science*, 142, 116-123.
- Kubíková, L., Simon, O. P., Tichá, K., Douda, K., Maciak, M. and Bílý, M. (2012). The Influence of Mesoscale Habitat Conditions on the Macroinvertebrate Composition of Springs in a Geologically Homogeneous Area. *Freshwater Science*, 31, 668-679.
- van de Bund, W. et al. (2010). Guidance on the intercalibration process (Annex V).
Technical report. JRC: Institute for Environment and Sustainability, Ispra, Italy.

Manuscripts in Progress

- Hušková M. and Maciak, M. (2014). Discontinuities in Robust Nonparametric Regression with α -mixing Dependence. *J. of Nonparametric Statistics (to be submitted)*.
- Maciak, M. (2014). Join Point Regression via Regularization.
- Maciak, M. and Mizera I. (2014). Change-point Estimation and Inference in Nonparametric Regression Using Different Regularization Concepts.
- Maciak, M., Mizera, I. and Pešta, M. (2014). Parallel Estimation and Inference in Chain Ladder Reserves.

Technical Reports & Others

- Maciak, M., Opatřilová, L, Wildová, P. and Horký, P. (2012). Instruction Manual for Intercalibrating National Assessment Systems for Macro-Invertebrates and Phytobenthos (Eastern Continental GIG). *Technical Report, Prague, Czech Republic.*
- Maciak, M. (2011). Analysis Report on Boundary Harmonization. *Technical Report for the IC Validation Workshop on Rivers and Lakes. (Nov. 16, 2012), Ispra, Italy.*
- Maciak, M. and Opatřilová, L. (2011). Benchmark Selection - Justification Report. *WFD Intercalibration Phase 2: Milestone 6, Prague, Czech Republic.*

Theses

PhD. thesis defended in 2011	Flexibility, Robustness and Discontinuities in Nonparametric Regression Approaches (Supervisor: Prof. Marie Hušková)
Master thesis defended in 2008	Spline Models with Change-points Applied to Seroprevalence Data (Supervisor: Prof. Marc Aerts & Dr. Niel Hens)
Master thesis defended in 2006	Additive Regression Models with Regression Splines (Supervisor: Ass. Prof. Peter Volf)

Referring Papers & Manuscripts

Computational Statistics Journal, Statistics Journal, Conference Proceedings;

Research Communications, Conferences & Workshops

IV

Invited Talks

University of British Columbia, Vancouver, Canada;
(invited statistical seminar, Department of Statistics, 2013)

University of Alberta, Edmonton, Canada;
(invited statistical seminar, Dept. of Math. and Stat. Sciences, 2012, 2013)

ISNPS 2012 conference, Chalkidiki, Greece;
(invited talk for a conference session Nonparametric Change Point Analysis, 2012)

European Commission Joint Research Centre, Ispra, Italy;
(series of talks on statistical methodology in ecology, 2010 – 2011)

Scottish Environment Protection Agency, Edinburgh, Scotland, UK;
(invited talk on statistical methodology in a quality assessment process, 2011)

Bundesministerium für Land- und Forstwirtschaft, Vienna, Austria;
(two talks on statistical methodology in a river quality assessment, 2010)

Slovak Academy of Science and Comenius University in Bratislava, Slovak Republic;
(invited statistical seminar, Faculty of Mathematics, Physics and Informatics, 2009)

University of Hamburg, Germany;
(invited statistical seminar, Center of Math. Statistics and Stoch. Processes, 2007)

Charles University in Prague, Czech Republic;
(invited statistical seminar, Dept. of Probability and Math. Statistics, 2006, 2008)

Contributed Conference Talks

IMS-New Researches Conference 2013, SSC 2013, PIMS-YRC 2013, ICORS 2011,
Conference on Resampling Methods and High Dimensional Data 2010, EMS 2010,
Prague Stochastics 2010, ICORS 2010, Stochastika 2009, WDS 2007,
ROBUST 2014, 2008 and 2006.

Research Details

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Research Keywords

nonparametric regression, smoothness, robustness;
discontinuities (change-points) and structural breaks;
sparsity, regularization, variable selection, lasso and degrees of freedom;
weak dependence, bootstrap methods, multivariate statistical methods, etc.

Research Grants (principal investigator only)

Intercalibration of BQE fish and related research;
Principal investigator, total amount 350.000 Czk (cca 17.500 CAD);
State Environmental Fund of the Czech Republic, Prague, Czech Republic;
(offered by the program officer based on previous work on the intercalibration process)

Project Participation (a brief selection)

Neurocognitive disorders: dementia and Alzheimer disease;
Center for Advanced Imaging Research, Mayo Clinic, Rochester, MN, USA;
CAD risk based on arterial hypertension occurrence in elderly patients;
Central Military Hospital Ružomberok, Ružomberok, Slovak Republic;
Monitoring and judging the quality of freshwater systems;
European Commission Joint Research Centre, Ispra, Italy;
Comparison of shoulder muscle activities during wall climbing and support exercising;
Palacký University in Olomouc, Olomouc, Czech Republic;

Academical experience

VI

Tutoring of Theses (topics)

Asymptotically Optimal Tests (bachelor thesis, defended in 2007);
Robust Estimation in Linear Regression Models (bachelor thesis);
M-Estimates (bachelor thesis);

Teaching

STAT235 Introduction to Statistics for Engineering (University of Alberta);
(instructor of a multi-session undergraduate course, about 100 enrolled students)
NMAI059 Probability and Statistics (Charles University in Prague);
(lab session instructor for a graduate course, about 30 enrolled students)
NSTP022 Probability and Mathematical Statistics (Charles University in Prague);
(lab session instructor for a graduate course, about 30 enrolled students)
NMAI061 Methods of Mathematical Statistics (Charles University in Prague);
(lab session instructor for an undergraduate course, about 30 enrolled students)
NSTP004 Computational Environment for Statistics and Data Analysis;
(instructor for a graduate course, about 20 enrolled students)
NMAI060 Probabilistic Methods (Applied Markov Processes), Charles University;
(replacement for a professor, graduate course, about 50 enrolled students)
Statistical Software and Bootstrap Methods (University of Hasselt, Belgium);
(replacement for a professor - two-day training, about 50 enrolled students)

Special Skills

VII

Tutorials & Trainings

2010 – 2012	Applied Ecology and Ecology of Aquatic Organisms T.G.Masaryk Water Research Institute, Prague, Czech Republic;
Nov. 2008	Penalised Spline Smoothing and Geoadaptive Regression Katholieke Universiteit in Leuven, Belgium;

Programming Skills

Programming: C++, Borland Pascal;
Statistical Software: SAS, S-plus, R, Mosek, NCSS, SPSS, Statistica;
Web Tools: HTML, JavaScript, CSS, PHP, SQL;
Others: L^AT_EX, Mathematica, MuPad, MatLab, WealthLab;

Language Skills

English - fluent (spoken and written)
Czech - fair (spoken and written)
German - fair (spoken and written)
Spanish - basic
Slovak - mother tongue

Individual Interests

Music: playing the guitar and the bass guitar;
Literature: books, literary production (newspaper blogs);
Mountaineering: rock/climbing, back-country & cross-country, mountain hiking;
Sport activities: skiing, cycling, tennis, swimming, and others;
Photography: semi-professional wedding and coverage photography;