Ing. Lukáš Ulrych

Personal information

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Nationality: Czech

Date of birth: 15th April, 1992

Education

2017 - to date

Czech Technical University in Prague - Faculty of Nuclear Sciences and Physical Engineering
Currently studying for a Ph.D. degree

2015 - 2017

Czech Technical University in Prague - Faculty of Nuclear Sciences and Physical Engineering
Master's degree in Applied Mathematics and Stochastic Methods in Mathematical Engineering
Master's thesis: Estimation of hyperparameters of Gaussian processes

> Brief summary of the thesis: Gaussian proocesses represent a class of non–parametric models used mainly for data classification and regression. They are fully determined by their mean and covariance function, which, in turn, are dependent on set of parameters. Good and robust estimation of these hyperparameters ensures good modeling and predictive abilities of Gaussian processes but it represents a difficult task due to the way they are included in the model. The aim of the thesis was to implement and assess algorithms used for hyperparameter estimation with special interest in regression models with heteroscedastic noise.

2012 - 2015

Czech Technical University in Prague - Faculty of Nuclear Sciences and Physical Engineering
Bacherlor's degree in Applied Mathematics and Stochastic Methods in Mathematical Engineering
Bachelor's thesis: Structure selection of probabilistic model

> Brief summary of the thesis: Main focus of the thesis was the Bayesian probability theory approach of modeling linear regression with emphasis on sparse solutions. Considered methods were applied to the problem of inverse modeling of estimation of source term of release of hazardous substances into atmosphere with real data from experiment ETEX.

Work Experience

January 2018 - to date

> Research assistant at The Institute of Information Theory and Automation (UTIA)

April 2017 - December 2018

> Junior research assistant at University of West Bohemia.

> Participation on project RICE - NETESIS. Focus of the assignment are Gaussian processes.

January 2016 - April 2017

> Research assistant at The Institute of Information Theory and Automation (UTIA)

> Member of team of project STRADI (http://stradi.utia.cas.cz). The goal of the project was to develop methods for determining the source term of an accidental release of radionuclides or other hazardous substances into the atmosphere which is suitable for both real-time application (e.g., for emergency preparedness) and assessment of environmental damages.

> > Participation at international conference ISBA 2016 with poster presentation titled Bayesian estimation of linear regression model with unknown prior and noise covariance matrix.

Skills and abilities

Computer skills

Well-acquainted with computational environments Matlab and R and familiar with applications from MS Office, text editor LyX and typesetting system TeX. Basic knowledge of programming language Python.

Language skills

Czech (mother tongue), upper intermediate English, intermediate Spanish, elementary German.

Other skills

Driving license (8 years).

Interests

Ballroom dancing (standard and latino). Reading with special interest in fantasy (Stephen King) and science-fiction (Isaac Asimov) literature.