

Curriculum Vitae

Jiří Spilka



Personal

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Date & place of birth: March 26, 1984, Jilemnice, Czech Republic
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Education

2009 – 2013 Ph.D. – Department of Cybernetics, Faculty of Electrical Engineering (FEE), Czech Technical University in Prague (CTU), thesis Complex approach to fetal heart rate analysis: A hierarchical classification model
2006 – 2009 Master – Biomedical Engineering, FEE, CTU, graduated with honours, diploma thesis Fetal electrocardiogram analysis awarded by Deans prize.
2007 – 2008 Erasmus exchange program – Biomedical Engineering, Institute of Technology, Linkopings University, Sweden.
2003 – 2006 Bachelor studies – Cybernetics and Measurement, FEE, CTU

Experience

2015 – present Czech Institute of Informatics, Robotics and Cybernetics, Czech Technical University in Prague, Researcher
2014 – 2015 Department of Physics, ENS Lyon, France, Postdoctoral research fellow, project ANR Fetuses with Patrice Abry
2010 – 2013 Department of Cybernetics, Czech Technical University in Prague, Researcher (part time)
2008 – 2013 Medical Technologies CZ (part time). Research and development for BTL a.s.

Research

Signal processing and analysis of biological signals with focus on the field of human electrocardiography. Main interest include analysis (Spectral estimation, Scale invariant properties) of fetal heart rate and its classification (ensemble based methods – Adaboost, Support Vector Machines).

Research projects

2010-2015 Grant IGA – Cardiotocography evaluation by means of artificial intelligence.
2012-2013 Mobility CZ-GR – Intelligent System for Automatic CardioTocoGraphic Data Analysis and Evaluation in Context of Patient Record Data using State of the Art Computational Intelligence Techniques
2010-2013 Eniac-MAS – One part of the project: mCTG – Mobile CardiTocoGraphy – telemedicine application for risk pregnancies at home.

Scientific visits

2013 ENS Lyon, France, 1 month
2012 TEI Epirus, Arta, Greece, 1 month

Languages

English (fluent), Swedish (basics), Russian (basics)

Pedagogical activities

Teaching in the following courses: Introduction to Biomedical Engineering, Medical Informatics, eHealth and telemedicine

Publication record

Author of 8 journal papers and more than 20 conference papers.
Citations: 27 (WOS) (without self-citations)
h-index: 3 (WOS)

Journal papers

M. Burša, L. Lhotská, V. Chudáček, J. Spilka, P. Janků, and L. Hruban. Information retrieval from hospital information system: Increasing effectivity using swarm intelligence. *Journal of Applied Logic*, 13(2, Part A):126 – 137, 2015.

M. Doret, J. Spilka, V. Chudáček, P. Gonçalves, and P. Abry. Fractal Analysis and Hurst Parameter for intrapartum fetal heart rate variability analysis: A versatile alternative to Frequency bands and LF/HF ratio. *PLOS ONE*. *Accepted for publication*, 2015.

L. Hruban, J. Spilka, V. Chudáček, P. Janků, M. Huptych, M. Burša, A. Hudec, M. Kacerovský, M. Koucký, M. Procházka, V. Korečko, J. Seget'a, O. Šimetka, A. Měchurová, and L. Lhotská. Agreement on intrapartum cardiotocogram recordings between expert obstetricians. *Journal of Evaluation in Clinical Practice*, 21(4):694–702, 2015.

P. Karvelis, J. Spilka, G. Georgoulas, V. Chudáček, C. D. Stylios, and L. Lhotská. Combining latent class analysis labeling with multiclass approach for fetal heart rate categorization. *Physiological Measurement*, 36(5):1001, 2015.

V. Chudáček, J. Spilka, M. Burša, P. Janků, L. Hruban, M. Huptych, and L. Lhotská. Open access intrapartum CTG database. *BMC Pregnancy Childbirth*, 14(1):16, 2014.

J. Spilka, V. Chudáček, P. Janků, L. Hruban, M. Burša, M. Huptych, L. Zach, and L. Lhotská. Analysis of obstetricians' decision making on CTG recordings. *Journal of Biomedical Informatics*, 51(0):72–79, 2014.

J. Spilka, V. Chudáček, M. Koucký, L. Lhotská, M. Huptych, P. Janků, G. Georgoulas, and C. Stylios. Using nonlinear features for fetal heart rate classification. *Biomedical Signal Processing and Control*, 7(4):350–357, 2012.

V. Chudáček, J. Spilka, P. Janků, M. Koucký, L. Lhotská, and M. Huptych. Automatic evaluation of intrapartum fetal heart rate recordings: A comprehensive analysis of useful features. *Physiological Measurement*, 32:1347–1360, 2011.