

Curriculum Vitae

[Václav Chudáček \(*1979\)](#)

- 2015 – now Researcher, Assistant professor at the Czech Institute of Informatics, Robotics and Cybernetics, CTU in Prague, Czech Republic
- 2013 – 2014 Assistant professor at dept. of Cybernetics, FEE, CTU in Prague
- 2012 – 2013 Postdoctoral Fellowship, Dept. of Physics, ENS de Lyon, France
- 2011 Ph.D. in Artificial Intelligence and Biocybernetics at the Gerstner Laboratory, Dept. of Cybernetics, FEE, CTU in Prague
- 2007 – 2012 Research fellow, Dept. of Cybernetics, FEE, CTU in Prague
- 2005 – 2007 Junior researcher - Holter development at R&D, Medical Technologies, Praha, Czech Republic, (<http://www.btlnet.com/>)
- 2004 – 2005 Programmer at Unicorn systems (<http://www.unicorn.eu/>), outsourced C# developer at Česká Spořitelna a.s. (bank), Czech Republic
- 2004 Master degree (Ing.) in Biomedical engineering at the FEE, CTU in Prague

Research interest

- *Data analysis* – feature extraction, dimension reduction, data transformation and classification
- *Signal processing of biological signals* such as fetal heart rate (FHR) and holter ECG.
- *Development of diagnostic tools* for clinical environment using methods of artificial intelligence

Publication record (WOS without self-citations):

- journal papers: 11
- proceeding papers: 40+
- citations: 128 (WOS) / 206 (Scopus) / 408 (GoogleScholar)
- h-index: 7 (WOS) / 8 (Scopus) / 11 (GoogleScholar)

Journal publications (list of all publications available at the [website](#))

- Chudáček, V. – Abou Khashbah, I. - Spilka, J. - Huptych, M. - et al. **Intrapartum Risk Factors for Low pH: A Retrospective Population Based Study on 13551 Term Deliveries**, In: International Journal of Epidemiology (*Submitted 03/2017*)
- Doret, M. - Spilka, J. - Chudáček, V. - Goncalves, P. - Abry, P. **Fractal Analysis and Hurst Parameter for intrapartum fetal heart rate variability analysis: A versatile alternative to Frequency bands and LF/HF ratio**, In: Plos One, 10(8), 2015
- Hruban, L. - Spilka, J. - Chudáček, V. - et al. **Agreement on CTG intrapartum recordings between expert-obstetricians** In: Journal of Evaluation in Clinical Practice, 20(4), 2015.
- Karvelis, P. - Spilka, J. - Georgoulas, G. - Chudáček, V. - Stylios, C. - Lhotská, L. **Combining Latent Class Analysis Labeling with Multiclass Approach for Fetal Heart Rate Categorization** In: Physiological Measurement 36, 1001-1024, 2015.
- Chudáček, V. - Spilka, J. - Burša, M. - Janků, P. - Hruban, L. - et al. **Open Access Intrapartum CTG Database** In: BMC Pregnancy and Childbirth [online]. 2014, vol. 14, no. 1, art. no. 16, Internet: <http://www.biomedcentral.com/1471-2393/14/16>. ISSN 1471-2393.
- Chudáček, V. - Andén, J. - Mallat, S. - Abry, S. - Doret, M. **Scattering Transform for Intrapartum Fetal Heart Rate Variability Fractal Analysis: A Case-Control Study** In: IEEE Transactions on Biomedical Engineering. 2014, vol. 61, no. 4, art. no. 6679254, p. 1100-1108. ISSN 0018-9294.
- Spilka, J. - Chudáček, V. - Janků, P. - Hruban, L. - et al. **Analysis of Obstetricians' Decision making on CTG Recordings** In: Journal of Biomedical Informatics. 2014, vol. 51, p. 72-79.
- Burša, M. - Lhotská, L. - Chudáček, V. - Spilka, J. - Janků, P. - et al. **Information Retrieval from Hospital Information System: Increasing Effectivity Using Swarm Intelligence** In: Journal of

Applied Logic. 2014, vol. 13, no. 2, Part A, p. 126-137. ISSN 1570-8683.

- Spilka, J. - Chudáček, V. - Koucký, M. - Lhotská, L. - Huptych, M. - et al. **Using Nonlinear Features for Fetal Heart Rate Classification** In: Biomedical Signal Processing and Control. 2012, vol. 4, no. 7, p. 350-357. ISSN 1746-8094.
- Chudáček, V. - Spilka, J. - Janků, P. - Koucký, M. - Lhotská, L. - et al. **Automatic Evaluation of Intrapartum Fetal Heart Rate Recordings: A Comprehensive Analysis of Useful Features** In: Physiological Measurement. 2011, vol. 32, no. 8, p. 1347-1360. ISSN 0967-3334.
- Kos, P. - Varga, F. - Handl, M. - Kautzner, J. - Chudáček, V. - et al. **Correlation of Dynamic Impact Testing, Histopathology and Visual Macroscopic Assessment in Human Osteoarthritic Cartilage** In: International Orthopaedics. 2011, vol. 35, no. 1, p. 1733-1739. ISSN 0341-2695.
- Chudáček, V. - Georgoulas, G. - Lhotská, L. - Stylios, C. - Petřík, M. - et al. **Examining Cross-Database Global Training to Evaluate Five Different Methods for Ventricular Beat Classification** In: Physiological Measurement. 2009, vol. 30, no. 7, p. 661-677. ISSN 0967-3334.

Awards

- a. Best paper award for paper entitled "Hurst Exponent and IntraPartum Fetal Heart Rate: Impact of Decelerations" at IEEE Computer Based Medical Systems 2013, Porto, Portugal
- b. 2nd place at Computing in Cardiology (CinC) 2011 Challenge, Improving the Quality of ECGs Collected using Mobile Phones
- c. Best paper award for paper entitled "Selection of important features for decision making on Body Surface Potential Mapping" at 5th European Symposium on Biomedical Engineering 2005, Patras, Greece

Awarded grants (principal investigator/member of the team)

- 2014-2016 Grant of Grant Agency of the Czech Republic no.: 14-28462P entitled "Statistical signal processing of intrapartum CTG in the context of clinical information". Principal investigator; Budget: ca. 50,000 EUR.
- 2012-2013 Grant of Ministry of Education of the Czech Republic - Intelligent system for automatic analysis of cardiotocographic data and their evaluation using methods of artificial intelligence (together with TEI of Epirus, Artas, Greece). Principal investigator.
- 2010-2015 Grant of Ministry of Healthcare of the Czech Republic - Cardiotocography evaluation by means of artificial intelligence (together with University Hospital, Brno). Co-applicant. Budget: ca. 250,000 EUR.
- 2010-2013 Eniac-MAS; EU project where one part of the project is mCTG – Mobile CardioTocoGraphy – telemedicine application for risk pregnancies at home. (Cooperation with Siemens Austria, Medical University Graz). Team member.
- 2007-2009 DfA@eInclusion; EU project promoting design for all approach in the development of ICT products. Team member.

Organisation of International conferences

- Co-organized **SPaM in Labour** workshop in Lyon, France together with colleagues from ENS in Lyon and Oxford University (dr. Abry and dr. Georgieva). First attempt to bring together clinicians and biomedical engineers working in the field of CTG analysis. For further details please visit the workshop website at: <http://users.ox.ac.uk/~ndog0178/spam.htm>
- ITBAM 2012-2015: <http://www.dexa.org/itbam2014> - Information Technology in Bio- and Medical Informatics, programme committee member
- IWCIM 2015: <http://iwcim.isep.fr> - Computational Intelligence for multimedia understanding, programme committee member