

PERSONAL INFORMATION

CURRICULUM VITAE

Lenka LHOTSKÁ

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Sex Female | Date of birth 19/01/1961 | Nationality CZ

WORK EXPERIENCE

2017 - now	Head of the Department of Natural Sciences of the Faculty of Biomedical Engineering, Czech Technical University in Prague
2014 - now	Head of CogSys department of the Czech Institute of Informatics, Robotics and Cybernetics, Czech Technical University in Prague
2004 - 2016	Head of BioDat research group (Biomedical Data and Signal Processing g.)
1997 - now	Associate Professor, Czech Technical University in Prague
1994-1995	Three-month fellowship at the École Nationale Supérieure de Telecommunication, Paris, France
1992	Three-month fellowship at the Johann Kepler University, Linz, Austria
1987 - 1997	Researcher, Czech Technical University in Prague
1984 - 1987	Ph.D. student, Czech Technical University in Prague

Main activities: teaching, research, principal investigator in more than 15 local and international projects
Business or sector: biomedical engineering, biomedical informatics, ambient assisted living, cybernetics, artificial intelligence, knowledge-based systems, machine learning

EDUCATION AND TRAINING

1997	Associate Professor, Czech Technical University in Prague
1989	PhD in Technical Cybernetics, Czech Technical University in Prague
1979 - 1984	M.Sc. in Control Engineering, Czech Technical University in Prague

Information on publications:

2012 – 2019: 19 journal papers (with IF>0), 2 papers in other peer-reviewed journals, 4 book chapters, 87 conference papers (author or co-author), 2 papers in Czech journals, 552 citations in SCI (except autocitations), Web of Science: total 658 citations including autocitations. H-index 12; Scopus: 1088 citations, H-Index 15

Main Projects

Ministry of Health Care IGA No. NT11124 „Impact of Cardiotocography evaluation by means of artificial intelligence on perinatal care“, 2010-2015, partner leader
AZV CR No. 15-31398A Features of Electromechanical Dyssynchrony that Predict Effect of Cardiac Resynchronization Therapy, 2015 – 2019, partner leader
AZV CR No. 15-25710A Individual dynamics of glycaemia excursions identification in diabetic patients to improve self managing procedures influencing insulin dosage, 2015 – 2018, partner leader
EU FP6 IST 026968 K4CARE - Knowledge-Based HomeCare eServices for an Ageing

Europe (technological manager), 2006-2009
 Transdisciplinary Research in Biomedical Engineering, I – II, 2 projects running in 1999 - 2011, project manager (at the Faculty of Electrical Engineering CTU, principal investigator
 Information Society Programme 1ET201210527 „Knowledge-based support of diagnostics and prediction in cardiology“, 2005-2009, project manager
 Information Society Programme 1ET101210512 „Intelligent methods for evaluation of long-term EEG recordings“, 2005-2009, project manager
 Ministry of Industry and Trade Trio FV40426 PBPK Platform, 2019 - 2022
 Ministry of Industry and Trade Trio FV20696 Personal Health Assistance Systems, 2017 - 2021
 Ministry of Industry and Trade Trio FV30421 Progressive technology for the rationalization of personalized pharmacogenomics, nutrigenomics and sports medicine, 2018 - 2021
 Participation in other more than 10 international projects (EU – FP5, FP6, ENIAC)

Memberships

chair of the Working Group Personal Portable Devices of European Federation for Medical Informatics 2012 - now
 Member of the Council of the Czech Society for Biomedical Engineering and Medical Informatics 2005 - now
 Member IEEE, IET
 National representative in International Society for Telemedicine and eHealth (IsfTeH) 2011 – now
 National representative in International Federation for Medical and Biological Engineering (IFMBE) 2009 - now
 Member Engineering Academy of the Czech Republic (since 2014)

Selected publications:

- Burša, M. - Lhotská, L. - Chudáček, V. - Spilka, J. - Janků, P. - et al.: Information Retrieval from Hospital Information System: Increasing Effectivity Using Swarm Intelligence. *Journal of Applied Logic*. 2015, vol. 13, no. 2, Part A, p. 126-137. ISSN 1570-8683
- Kužílek, J. - Křemen, V. - Souček, F. - Lhotská, L.: Independent Component Analysis and Decision Trees for ECG Holter Recording De-Noising. *PLoS ONE* [online]. 2014, vol. 9, no. 6, art. no. e98450, p. 1-16.
- Kužílek, J. - Lhotská, L.: Electrocardiogram Beat Detection Enhancement Using Independent Component Analysis. *Medical Engineering & Physics*. 2013, vol. 35, no. 6, p. 704-711. ISSN 1350-4533.
- Hlúbik, J. - Lhotská, L. - Hlúbik, P. - Strítecká, H.: Changes in Bioimpedance and Body Composition Parameters Depending on Measurement Conditions. *Hygeia Public Health*. 2013, vol. 48(2), no. 48(2), p. 181-184. ISSN 1509-1945.
- Spilka, J. - Chudáček, V. - Koucký, M. - Lhotská, L. - Huptych, M. - et al.: Using Nonlinear Features for Fetal Heart Rate Classification. *Biomedical Signal Processing and Control*. 2012, vol. 4, no. 7, p. 350-357. ISSN 1746-8094.
- Macaš, M. - Lhotská, L. - Bakštein, E. - Novák, D. - Wild, J. - et al.: Wrapper Feature Selection for Small Sample Size Data Driven by Complete Error Estimates. *Computer Methods and Programs in Biomedicine*. 2012, vol. 108, no. 1, p. 138-150. ISSN 0169-2607.
- 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. *Physiological Measurement* 2011, vol. 32, no. 8, p. 1347-1360
- Lhotská, L. – Burša, M. – Huptych, M. – Chudáček, V. – Havlík, J.: Standardization and Interoperability: Basic Conditions for Efficient Solutions. In IFMB Proceedings. Berlin. Springer Science+Business Media, 2011, p. 1140-1143
- Zvárová, J. – Lhotská, L. – Přibík, V.: Biomedicínská data a znalosti (Biomedical data and knowledge – book in Czech). 1.vyd. Praha Karolinum, 2010. 428 s.

- Burša, M. - Lhotská, L.: Artificial Intelligence Methods in Electrocardiogram and Electroencephalogram Data Clustering. *International Journal of Computational Intelligence and Applications*. 2009, vol. 8, no. 1, p. 69-84. ISSN 1469-0268.
- Gerla, V. - Paul, K. - Lhotská, L. - Krajča, V.: Multivariate Analysis of Full-Term Neonatal Polysomnographic Data. *IEEE Transactions on Information Technology in Biomedicine*. 2009, vol. 13, no. 1, p. 104-110. ISSN 1089-7771.
- Havlík, J. - Lhotská, L. - Parák, J. - Dvořák, J. - Horčík, Z. - et al.: A Modular System for Rapid Development of Telemedical Devices. *Journal of Universal Computer Science*. 2013, vol. 19, no. 9, p. 1242-1256. ISSN 0948-695X.
- Hlúbik, J. - Lhotská, L. - Hlúbik, P. - Štrítecká, H.: Changes in Bioimpedance and Body Composition Parameters Depending on Measurement Conditions. *Hygeia Public Health*. 2013, vol. 48(2), no. 48(2), p. 181-184. ISSN 1509-1945.
- 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. *Physiological Measurement*. 2009, vol. 30, no. 7, p. 661-677. ISSN 0967-3334.
- Kužilek, J. - Lhotská, L.: Electrocardiogram Beat Detection Enhancement Using Independent Component Analysis. *Medical Engineering & Physics*. 2013, vol. 35, no. 6, p. 704-711. ISSN 1350-4533.
- Macaš, M. - Lhotská, L. - Bakštein, E. - Novák, D. - Wild, J. - et al.: Wrapper Feature Selection for Small Sample Size Data Driven by Complete Error Estimates. *Computer Methods and Programs in Biomedicine*. 2012, vol. 108, no. 1, p. 138-150. ISSN 0169-2607.
- Spilka, J. - Chudáček, V. - Koucký, M. - Lhotská, L. - Huptych, M. - et al.: Using Nonlinear Features for Fetal Heart Rate Classification. *Biomedical Signal Processing and Control*. 2012, vol. 4, no. 7, p. 350-357. ISSN 1746-8094.
- Vavrečka, M. - Gerla, V. - Lhotská, L. - Brunovský, M.: Frames of Reference and Their Neural Correlates Within Navigation in a 3D Environment. *Visual Neuroscience*. 2012, vol. 2012, no. 3, p. 183-191. ISSN 0952-5238.
- Vavrečka, M. - Lhotská, L.: The Alteration of Reference Frames in a Vertical Navigation. *Cognitive Processing*. 2012, vol. 2012, no. 13:1, p. S72-S73. ISSN 1612-4782.
- Vavrečka, M. - Rosset, B. - Lhotská, L.: The Inter-individual Differences and the Test-retest Reliability of a EEG Signal. *Clinical Neurophysiology*. 2012, vol. 123, no. 3, p. e10-e11. ISSN 1388-2457.
- Gerla, V.; Křemen, V.; Macaš, M.; Dudysová, D.; Mládek, A.; Šoš, P.; Lhotská, L. Iterative expert-in-the-loop classification of sleep PSG recordings using a hierarchical clustering. *Journal of Neuroscience Methods*. 2019, 317 61-70. ISSN 0165-0270.
- Saifutdinova, E.; Congedo, M.; Dudysová, D.; Lhotská, L.; Kopřivová, J.; Gerla, V. An Unsupervised Multichannel Artifact Detection Method for Sleep EEG Based on Riemannian Geometry. *Sensors*. 2019, 19(3), 1-15. ISSN 1424-8220.
- Kittnar, O.; Riedlbauchova, L.; Adla, T.; Suchanek, X.; Lhotská, L. et al. Outcome of Resynchronization Therapy on Superficial and Endocardial Electrophysiological Findings. *Physiological Research*. 2018, 67 S601-S610. ISSN 1802-9973.
- Vítečková, S.; Kutílek, P.; De Boisboissel, G.; Krupička, R.; Kauler, J.; Lhotská, L.; Szabó, Z. et al. Empowering lower limbs exoskeletons: State-of-the-art. *Robotica*. 2018, 36(11), 1743-1756. ISSN 0263-5747.
- Lhotská, L.; Burša, M.; Huptych, M. Application of Internet of Things in Health Care. *Journal of the International Society for Telemedicine and eHealth*. 2017, 5 ISSN 2308-0310.
- Lhotská, L.; Burša, M.; Huptych, M.; Chudáček, V.; Havlík, J. Interoperability of Medical Devices and Information Systems. In: *Handbook of Research on ICTs for Human-Centered Healthcare and Social Care Services (2 Volumes)*. Hershey, Pennsylvania: IGI Global, 2013. p. 749-762. ISBN 978-1-4666-3986-7.
- Adolf, J.; Macaš, M.; Lhotská, L.; Doležal, J. Deep neural network based body posture recognitions and fall detection from low resolution infrared array sensor. In: *2018 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) - Proceedings*. IEEE, 2018. p. 2394-2399. ISBN 978-1-5386-5488-0.

- Saiti, K.; Macaš, M.; Štechová, K.; Pit'ňová, P.; Lhotská, L. A Combined-Predictor Approach to Glycaemia Prediction for Type 1 Diabetes. In: World Congress on Medical Physics and Biomedical Engineering 2018 (Vol. 3). Springer Nature Singapore Pte Ltd., 2019. p. 753-756. IFMBE Proceedings. vol. 68/3. ISSN 1680-0737. ISBN 978-981-10-9022-6.
- Macaš, M.; Lhotská, L.; Štechová, K.; Pit'ňová, P.; Saiti, K. Particle swarm optimization based adaptable predictor of glycemia values. In: Cybernetics (CYBCONF), 2017 3rd IEEE International Conference on. Piscataway: Institute of Electrical and Electronic Engineers, 2017. ISBN 978-1-5386-2201-8