Sándor Földi

Contact Information

Faculty of Information Technology and Bionics
Pázmány Péter Catholic University
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Citizenship

Hungarian

Research Interests

sensory robotics, medical diagnostic devices, biomedical signal processing

Education

Pázmány Péter Catholic University, Hungary

Ph.D., Roska Tamás Doctoral School of Sciences and Technology (2014-2019)

- Thesis Title: Continuous non-invasive blood pressure monitoring via 3D force sensor and its applications in diagnostics
- Supervisors: PhD György Cserey, PhD Péter Sótonyi

Pázmány Péter Catholic University, Hungary

M.S., Faculty of Information Technology and Bionics (2012-2014)

- Thesis Topic: Soft-tissue based arterial wall simulation for pulse diagnostic purposes)
- Supervisors: PhD György Cserey, PhD Péter Sótonyi
- Area of Study: Info-Bionics Engineering

Pázmány Péter Catholic University, Hungary

B.S., Faculty of Information Technology and Bionics (2008-2012)

- Thesis Topic: Non-invasive pulse diagnosis with 3D tactile sensors
- Supervisors: PhD György Cserey, PhD Péter Sótonyi
- Area of Study: Molecular Bionics

Awards

Pázmány Péter Catholic University, Hungary

- I. prize, Scientific Student Conference, 2013
- III. prize, Scientific Student Conference, 2011

Academic Experience

Pázmány Péter Catholic University, Hungary

teaching assistant **2014-2016**

- Practices: Functional analysis, 3 Semesters
- Labor practices: Robotics, 1 Semester

Journal Publications

S. Földi, T. Horváth, F. Zieger, P. Sótonyi, and Gy. Cserey, "A novel non-invasive blood pressure waveform measuring system compared to millar applanation tonometry," *Journal of clinical monitoring and computing*, vol. 32, no. 4, pp. 717727, 2018.

S. Földi, T. Horváth, F. Zieger, P. Sótonyi, Gy. Cserey "Comparison of a non-invasive 3D force sensor-based method and the invasive arterial cannula in post-surgery intensive care patients – a pilot study," *Blood Pressure Monitoring*, LWW, vol. 24, no. 6, pp. 310–314, 2019.

International Conference Publications

N. Spulak, **S. Földi**, M. Koller, M. Niemier, J. Schmiedeler, Gy. Cserey: "Wrist pulse detection and analysis using three in-line sensors and linear actuators", *CNNA 2016*.

E. Fodor, B. Huberth, A. Csörgő, B. Gellért, D. Lippai, M. Koller, **S. Földi**, L. Madácsy, Z. Tulassay, Gy. Cserey,"Computerized three dimensional mapping and robotic maneuvering through the human large intestine trajectory with magnetic capsule endoscopy using reference tracking control," *Zeitschrift für Gastroenterologie*, vol. 53, no. 05, p. A10, 2015.

Other Publications

S. Földi, "Application areas of continuous non-invasive blood pressure measurements," *PhD Poceedings Annual Issues of the Doctoral School Faculty of Information Technology and Bionics 2016*, pp. 119–122, 2016.

S. Földi: "Validation of a non-invasive arterial pressure waveform measuring system", *PhD Poceedings Annual Issues of the Doctoral School Faculty of Information Technology and Bionics 2015*, pp. 115-118., 2015.

S. Földi: "Framework for examination the changes of arterial pulse signal waveform in time and space", *PhD Poceedings Annual Issues of the Doctoral School Faculty of Information Technology and Bionics 2014*, pp. 87-90., 2014.

Conference Presentations

S. Földi, F. Zieger, P. Sótonyi, Gy. Cserey,"Pulse diagnosis using arterial blood pressure waveforms," *Minisymposia at The 20th European Conference on Mathematics for Industry*, 2018.

S. Földi, F. Zieger, P. Sótonyi, Gy. Cserey, "Egy új lehetőség non-invazív vérnyomás mérésére," *Magyar Hypertonia Társaság XXVI. Továbbképző Kongresszusa Program és Absztrakt Kötet*, p. 30, 2018 (ISBN 978-615-00-2781-4), 2018.

Supervisions

Flóra Zieger, '*Examination of changing morphology in arterial blood pressure wave caused by physical exercise in pulse diagnosis view*', M.S. Thesis in Hungarian, 2015, Supervisors: György Cserey, Péter Sótonyi, Sándor Földi

Tamás Herkó, '*Filtering motion artefacts from non-invasive continuous blood pressure measurements*', B.S. Thesis in Hungarian, 2016, Supervisors: György Cserey, Péter Sótonyi, Sándor Földi

Zsófia Schramek, '*Feasibility study of pulse transit time determination using non-invasive boold pressure monitor and ECG*', B.S. Thesis in Hungarian, 2018, Supervisors: György Cserey, Péter Sótonyi, Sándor Földi

Bonifác Olivér Tóth, '*Non-invasive blood pressure monitoring using tactile sensor*', B.S. Thesis in Hungarian, 2016, Supervisors: György Cserey, Péter Sótonyi, Sándor Földi

András Bakó, '*Feasibility analysis of automatized pulse diagnosis with 3D tactile sensor*', B.S. Thesis in Hungarian, 2016, Supervisors: György Cserey, Péter Sótonyi, Sándor Földi

András Bakó, '*Automatized 3D tactile sensor positioning for non-invasive blood pressure waveform measurement*', M.S. Thesis in English, 2018, Supervisors: György Cserey, Péter Sótonyi, Sándor Földi

Anna Ignácz, '*Quantitative quality measure of arterial blood pressure signals*', B.S. Thesis in Hungarian, 2018, Supervisors: György Cserey, Péter Sótonyi, Sándor Földi

Technical Skills Extensive experience in biomedical signal processing and information technology

Matlab experience: linear algebra, Fourier transforms, nonlinear numerical methods, splines, visualization, signal processing, wavelet methods, etc.

Programming: C++, Python, Matlab

Applications: LaTeX, BibTeX, Matlab, Microsoft Office, and other common productivity packages for Windows, Autodesk Inventor, COMSOL Multiphysics, Atom

Language skills Fluent English and basic German.