

Curriculum vitae



Personal details

Name Lilla Zólyominé Botzheim
Birth name Lilla Botzheim
Birth date 1991-08-02
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Education

2016 – present **Phd student**, University of Pécs, Faculty of Sciences, Doctoral School of Biology
2014 – 2016 **Info-Bionics Engineering MSc** – Pázmány Péter Catholic University, Faculty of Information Technology and Bionics
2010 – 2014 **Molecular Bionics Engineering BSc** – Pázmány Péter Catholic University, Faculty of Information Technology and Bionics

Work experience

2020 – present **Junior Researcher** – Wigner Research Centre for Physics, Department of Computational Sciences, Neurorehabilitation and Motor Control Research Group
2018 – 2020 **Research assistant** – Wigner Research Centre for Physics, Department of Computational Sciences, Neurorehabilitation and Motor Control Research Group
2019 – 2020 **Research assistant** – University of Pécs, Faculty of Sciences

Projects

GINOP-2.3.2.-15-2016-00022 „3D printing and design visualization technologies, interdisciplinary research, education and development center for the University of Pécs.”
GINOP-2.3.2.-15-2016-00032 – „Formation of Research Centre of Neuro Rehabilitation and Human-Computer Interaction at the University of Pécs.”

Languages

Hungarian mother tongue
English „C” type vantage level language exam 2016
German „C” type vantage level language exam 2009

Informatical knowledge

MATLAB	Active usage, softwer development, data processing
MS Office	Active usage (Word, Excel, PowerPoint)

List of publications

Botzheim L, Laczko J, Torricelli D, Mravcsik M, Pons JL, Oliveira Barroso F. (2021) **Effects of gravity and kinematic constraints on muscle synergies in arm cycling.** *Journal of Neurophysiology*, 2021 Apr 1;125(4):1367-1381. doi: 10.1152/jn.00415.2020. Epub 2021 Feb 3. PMID: 33534650.

Mravcsik, M., Botzheim, L., Zentai, N., Piovesan, D., Laczko, J. (2021). **The Effect of Crank Resistance on Arm Configuration and Muscle Activation Variances in Arm Cycling Movements.** *Journal of Human Kinetics*, 76, 175–189. <https://doi.org/10.2478/hukin-2021-0053>

Katona, P; Mravcsik, M; Botzheim, L; Klauber, A; Cserháti, P; Laczkó, J (2021) **Bionikai megoldások gerincvelősérültek mozgás-rehabilitációjában és sportjában – Funkcionális Elektromos Izomingerléssel végzett kerékpározás : Bionic solutions in movement-rehabilitation and sports in the case of people with spinal cord injury** *MAGYAR SPORTTUDOMÁNYI SZEMLE* 22 : 1 (89) pp. 3-18. , 16 p.

Botzheim L, Mravcsik M, Zsenak I, Piovesan D, Laczko J (2019) **JerK decomposition during bimanual independent arm cranking.** *IEEE 16th International Conference on Rehabilitation Robotics (ICORR), Toronto, ON, Canada, 2019*, pp. 264-269. DOI: 10.1109/ICORR.2019.8779526

Botzheim L, Piovesan D, Laczko J. (2019): **Body position does not affect jerK decomposition in upper limb cycling.** *Program No. 064.11. 2019 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2019. Online.* <https://www.abstractsonline.com/pp8/#!/7883/presentation/59144>

Botzheim L, Malik Sz, Laczkó J.(2019): **Motor synergies of cyclic upper limb movement;** *Summer School of Neurorehabilitation, Baiona, Spanyolország, SSNR2019-Proceedings*, pp. 33-34., <http://www.ssnr2019.org/wp-content/uploads/2019/10/SSNR2019-Proceedings.pdf>

Zsenak I, Botzheim L, Laczko J, Piovesan D (2019): **JerK components are dependent on mvement size during arm cranking.** *Proceedings of the 41st Annual Intl. Conference of the IEEE Engineering in Medicine and Biology Society. Berlin, Germany, Presentation WePos-29.31.* <https://events.infovaya.com/presentation?id=44966>

Botzheim L, Mravcsik M, Malik Sz, Zentai N, Laczko J (2019): **The effect of crank resistance on muscle synergies during arm cranking;** *Progress in Motor Control XII: Movement Improvement Conference (2019), Amsterdam, Hollandia*

Botzheim L, Mravcsik M, Laczko J. (2019) **Comparing cyclic human arm movement patterns.** *8th Interdisciplinary Doctoral Conference 2019, Book of Abstracts, Pécs, 2019*

Botzheim L, Laczko J, Mravcsik M, Malik Sz, Szabo S. (2019). **Finding 1-Dimensional substructures in set of kinematic time series in a cyclic motor task.** *29th Annual Meeting of the Society for the Neural Control of Movement, Poster Abstracts 1G-98. p. 67-68. Toyama, Japan, 2019. Online.*

Botzheim L, Malik Sz, Mravcsik M, Laczko J (2018) **Dependence of EMG signals on body position in arm cycling movement.** *Poster number: P11.34. International Society of Electrophysiology and Kinesiology Congress, Dublin, 2018. Online.*

Laczko J, Botzheim L, Malik Sz, Mravcsik M, Szabo S. (2018) **Graph based dimension reduction to discern kinematic synergies in cycling arm movements**. Program No. 224.11. 2018 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2018. Online.

Botzheim L, Mravcsik M, Malik Sz, Zentai N, Laczko J (2017) **Body position affects muscle activity variances in the non-dominant arm during arm cycling**. Program No. 152.02. 2017 Neuroscience Meeting Planner. Washington, DC, USA: Society for Neuroscience, 2017. Online Program book p 892-893.

Malik Sz, Mravcsik M, Botzheim L, Klauber A, Zentai N, Laczko J. (2017). **Number and strength of muscle synergies in bimanual arm cycling as a function of crank resistance**. *Progress in Motor Control XI. Conference, 2017.07.22-22. Miami USA.*

Malik Sz, Mravcsik M, Botzheim L, Laczko J. (2017): **Muscle synergies during arm cycling by dominant and non-dominant arms**. In: *Annual Meeting of the Society for the Neural Control of Movement, Poster Abstracts 1-G- 134, p. 99- 100.*

Mravcsik M, Zentai N, Botzheim L, Laczko J. (2016): **Unimanual versus bimanual arm cycling movements muscle activity variances**. Program Number 886.01, 2016 Neuroscience Meeting Planner. Soc. for Neuroscience, San Diego CA, USA, Online

Botzheim L, Malik Sz, Mravcsik M, Zentai N, Laczko J. (2016): **Comparison of muscle activities during arm cycling in horizontal and vertical planes**. 5th International Scientific Conference - Motor Control 2016, szeptember 14-16., Wisła, Lengyelország, book of Abstracts, p.25

Zentai N, Mravcsik M, Botzheim L, Malik Sz, Laczko J. (2016), **Kinematic stability of arm cycling by the dominant and nondominant arm**. 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2016, Orlando, FL, USA, Control number.FrCT13.27.

Mravcsik M, Botzheim L, Zentai N, Laczko J. (2015): **Variances of joint configuration and muscle activity patterns during arm cycling against external resistances**. Program Number 609.06, 2015 Chicago, IL, USA, Society for Neuroscience 2015. Online

Mravcsik M, Botzheim L, Zentai N, Laczko J. (2015): **Stabilization of arm configuration and muscle activity patterns during cycling arm movements against external resistances**. *Progress in Motor Control X. Conference, 2015.07.22-25. Budapest, Hungary, Program Book p 125., ISBN: 978-615-187-07- 0*

Laki A.J, Botzheim L, Iván K, Tamási V, Civera P. (2014) **Separation of Microvesicles from Serological Samples Using Deterministic Lateral Displacement Effect** *JOURNAL OF BIONANOSCIENCE* 5:(1) pp. 48-54. (2014)

Laki A.J, Botzheim L, Iván K, Szabó T, Tamási V, Buzas E.I, Civera P. (2014) **Label-Free Fractionation of Tumor-Derived Extracellular Vesicles from Human Blood Using Deterministic Lateral Displacement Effect**, In: *CBM Society, Biological Microsystems Society 18th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS 2014). San Antonio, USA, 2014.10.26-2014.10.30. San Diego: CBM Society, 2014. pp. 2471-2473.*

Laki A.J, Botzheim L, Iván K, Szabó T, Buzas E.I, Civera P. (2014) **Microvesicle Fractionation Using Deterministic Lateral Displacement Effect**, In: *IEEE Nanotechnology Council, Nano/Micro Engineered and Molecular Systems (NEMS): 2014 9th IEEE International Conference. Waikiki, USA, 2014.04.13-2014.04.16. Piscataway: IEEE, 2014. pp. 490-494.*