

An alternative approach to measure quantity and smoothness of the human limb motions

Nõmm, Sven; Toomela, Aaro Estonian journal of engineering 2013 / p. 298-308 : ill <https://doi.org/10.3176/eng.2013.4.05> [Article at Scopus](#)

An alternative approach to distinguish movements of Parkinson disease patients

Nõmm, Sven; Toomela, Aaro; Vaske, Martti; Uvarov, Dan; Taba, Pille IFAC-PapersOnLine 2016 / p. 272-276 : ill <https://doi.org/10.1016/j.ifacol.2016.10.546> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Applicability of spiral drawing test for mental fatigue modelling

Senkiv, Olesja; Nõmm, Sven; Toomela, Aaro IFAC-PapersOnLine 2019 / p. 190-195 : ill <https://doi.org/10.1016/j.ifacol.2019.01.064> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

CNN based analysis of the Luria's alternating series test for Parkinson's disease diagnostics

Zarembo, Sergei; Nõmm, Sven; Medijainen, Kadri; Taba, Pille; Toomela, Aaro Recent Challenges in Intelligent Information and Database Systems : 13th Asian Conference, ACIIDS 2021, Phuket, Thailand, April 7–10, 2021 : proceedings 2021 / p. 3-13 https://doi.org/10.1007/978-981-16-1685-3_1 [Conference Proceedings at Scopus](#) [Article at Scopus](#)

Comparison of one- two- and three-dimensional CNN models for drawing-test-based diagnostics of the Parkinson's disease

Wang, Xuechao; Huang, Junqing; Chatzakou, Marianna; **Nõmm, Sven; Valla, Elli;** Medijainen, Kadri; Taba, Pille; Toomela, Aaro; Ruzhansky, Michael Biomedical signal processing and control 2024 / art. 105436, 8 p <https://doi.org/10.1016/j.bspc.2023.105436> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Deep CNN based classification of the Archimedes spiral drawing tests to support diagnostics of the Parkinson's disease

Nõmm, Sven; Zarembo, Sergei; Medijainen, Kadri; Taba, Pille; Toomela, Aaro IFAC-Papers OnLine 2020 / p. 260-264 <https://doi.org/10.1016/j.ifacol.2021.04.185> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Deep Learning Based Segmentation of Luria's Alternating Series Test to Support Diagnostics of Parkinson's Disease

Valla, Elli; Laur, Henry; Nõmm, Sven; Medijainen, Kadri; Taba, Pille; Toomela, Aaro 2023 International Conference on Machine Learning and Applications (ICMLA) 2023 / p. 1066-1071 : ill <https://doi.org/10.1109/ICMLA58977.2023.00158>

Detailed analysis of the Luria's alternating series tests for Parkinson's disease diagnostics

Nõmm, Sven; Bardõš, Konstantin; Toomela, Aaro; Medijainen, Kadri; Taba, Pille 17th IEEE International Conference on Machine Learning and Applications : ICMLA 2018, 17–20 December 2018, Orlando, Florida, USA : proceedings 2018 / p. 1347–1352 <https://doi.org/10.1109/ICMLA.2018.00219>

Determining necessary length of the alternating series test for Parkinson's disease modelling

Nõmm, Sven; Kossas, Tanel; Toomela, Aaro; Medijainen, Kadri; Taba, Pille 2019 International Conference on Cyberworlds : CW 2019 : 2-4 October 2019, Kyoto, Japan : proceedings 2019 / p. 261-266 : ill <http://doi.org/10.1109/CW.2019.00050>

Enhancing cerebral palsy gait analysis with 3D computer vision : a dual-camera approach

Valla, Elli; Kanter, Gert; Nõmm, Sven; Kuusk, Anton Osvald; Maran, Peeter; Seenmaa, Karl Mihkel; Mägi, Killu; Toomela, Aaro 2024 10th International Conference on Control, Decision and Information Technologies (CoDIT) 2024 / p. 1352-1357 <https://doi.org/10.1109/CoDIT62066.2024.10708137> [Article at Scopus](#)

Gait analysis based approach for Parkinson's disease modeling with decision tree classifiers

Krajuškina, Anna; Nõmm, Sven; Toomela, Aaro 2018 IEEE International Conference on Systems, Man, and Cybernetics : SMC 2018, 7–10 October 2018 Miyazaki, Japan 2018 / p. 3720-3725 : ill <https://doi.org/10.1109/SMC.2018.00630>

Generative adversarial networks as a data augmentation tool for CNN-based Parkinson's disease diagnostics

Dzotsenidze, Erik; Valla, Elli; Nõmm, Sven; Medijainen, Kadri; Taba, Pille; Toomela, Aaro IFAC-Papers OnLine 2022 / p. 108-113 : ill <https://doi.org/10.1016/j.ifacol.2022.10.240> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Interpretable quantitative description of the digital clock drawing test for Parkinson's disease modelling

Nõmm, Sven; Mašarov, Ilja; Toomela, Aaro; Medijainen, Kadri; Taba, Pille 15th International Conference on Control, Automation, Robotics and Vision (ICARCV 2018) : Singapore, November 18-21, 2018 2018 / p. 1839-1844 : ill <https://doi.org/10.1109/ICARCV.2018.8581074>

Leveraging artificial intelligence for microkinematic analysis of fine motor skills in Parkinson's disease detection =

Tehisintellekti rakendamise peenmotoorika mikrokinemaatilises analüüsis Parkinsoni tõve tuvastamiseks

Valla, Elli 2025 <https://digikogu.taltech.ee/et/Item/e7c8ea35-6739-43fc-8f24-0c8607c62346> <https://doi.org/10.23658/taltech.26/2025> https://www.ester.ee/record=b5747730*est

A light-weight CNN model for efficient Parkinsons disease diagnostics

Wang, Xuechao; Huang, Junqing; Chatzakou, Marianna; Medijainen, Kadri; Taba, Pille; Toomela, Aaro; **Nõmm, Sven;** Ruzhansky, Michael 36th IEEE International Symposium on Computer-Based Medical Systems, CBMS 2023, Aquila, 22-24 June 2023 2023 / p.

LSTM-CNN : an efficient diagnostic network for Parkinson's disease utilizing dynamic handwriting analysis

Wang, Xuechao; Huang, Junqing; Chatzakou, Marianna; Medijainen, Kadri; Toomela, Aaro; **Nõmm, Sven**; Ruzhansky, Michael
Computer Methods and Programs in Biomedicine 2024 / art. 108066 <https://doi.org/10.1016/j.cmpb.2024.108066> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Machine learning based analysis of the upper limb freezing during handwriting in Parkinson's disease patients

Gorbatšov, Vassili; Valla, Elli; Nõmm, Sven; Medijainen, Kadri; Taba, Pille; Toomela, Aaro IFAC-PapersOnLine 2022 / p. 91-95
<https://doi.org/10.1016/j.ifacol.2022.10.237> Conference Proceeding metrics at Scopus Article at Scopus Article at WOS

Parkinson's disease diagnostics based on the analysis of digital sentence writing test

Netšunajev, Aleksei; Nõmm, Sven; Toomela, Aaro; Medijainen, Kadri; Taba, Pille Vietnam journal of computer science 2021 / p. 493-512 <https://doi.org/10.1142/S2196888821500238> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Quantitative analysis in the digital Luria's alternating series tests

Nõmm, Sven; Toomela, Aaro; **Kozhenkina, Julia**; Toomsoo, Toomas 14th International Conference on Control, Automation, Robotics & Vision (ICARCV 2016) : Phuket, Thailand, November 13-15, 2016 2016 / [6] p. : ill
<https://doi.org/10.1109/ICARCV.2016.7838746>

Recognition and analysis of the contours drawn during the Poppelreuter's test

Nõmm, Sven; Bardoš, Konstantin; Mašarov, Ilja; Kozhenkina, Julia; Toomela, Aaro; Toomsoo, Toomas 2016 15th IEEE International Conference on Machine Learning and Applications : 18-20 December 2016, Anaheim, California : proceedings 2016 / p. 170-175 : ill <http://doi.org/10.1109/ICMLA.2016.0036>

Sentence writing test for Parkinson disease modeling: comparing predictive ability of classifiers

Netšunajev, Aleksei; Nõmm, Sven; Toomela, Aaro; Medijainen, Kadri; Taba, Pille Intelligent Information and Database Systems : 12th Asian Conference, ACIIDS 2020, Phuket, Thailand, March 23-26, 2020 : proceedings, Part I 2020 / p. 345-357
https://doi.org/10.1007/978-3-030-41964-6_30 Conference proceedings at Scopus Article at Scopus Article at WOS

Smartphone-based microkinematic feature analysis for mental fatigue detection using machine learning

Valla, Elli; Väli, Lilian; Nõmm, Sven; Toomela, Aaro Cognition, Technology & Work 2025 / 32 p. : ill <https://doi.org/10.21203/rs.3.rs-6601096/v1>

Towards establishing relationships between human arousal level and motion mass

Nõmm, Sven; Kõnnusaar, Tiit; Toomela, Aaro Neural Information Processing : 21st International Conference, ICONIP 2014, Kuching, Malaysia, November 3-6, 2014 : proceedings. Part 1 2014 / p. 19-26 : ill https://doi.org/10.1007/978-3-319-12637-1_3 Conference proceedings at Scopus Article at Scopus Conference proceedings at WOS Article at WOS

Towards modeling of finger motions in virtual reality environment

Nõmm, Sven; Toomela, Aaro; **Kulikov, Jaroslav** Augmented Reality, Virtual Reality, and Computer Graphics : 4th International Conference, AVR 2017, Ugento, Italy, June 12-15, 2017 : proceedings. Part I 2017 / p. 106-115 : ill https://doi.org/10.1007/978-3-319-60922-5_8 Conference proceedings at Scopus Article at Scopus Article at WOS

Towards the notion of average trajectory of the repeating motion of human limbs

Nõmm, Sven; Toomela, Aaro; **Gaichenja, Ilia** Intelligent Information and Database Systems : 9th Asian Conference, ACIIDS 2017, Kanazawa, Japan, April 3-5, 2017 : proceedings. Part II 2017 / p. 582-591 : ill https://doi.org/10.1007/978-3-319-54430-4_56 Conference proceedings at Scopus Article at Scopus Article at WOS

Transforming fatigue assessment : smartphone-based system with digitized motor skill tests

Valla, Elli; Toose, Ain-Joonas; Nõmm, Sven; Toomela, Aaro International Journal of Medical Informatics 2023 / art. 105152
<https://doi.org/10.1016/j.ijmedinf.2023.105152> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Tremor-related feature engineering for machine learning based Parkinson's disease diagnostics

Valla, Elli; Nõmm, Sven; Medijainen, Kadri; Taba, Pille; Toomela, Aaro Biomedical signal processing and control 2022 / art. 103551
<https://doi.org/10.1016/j.bspc.2022.103551> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Why behavioral indicators may fail to reveal mental states : individual differences in arousal-movement pattern relationships

Toomela, Aaro; **Nõmm, Sven**; Kõnnusaar, Tiit; Tammik, Valdar Frontiers in psychology 2019 / art. 270, 8 p. : ill
<https://doi.org/10.3389/fpsyg.2019.00270> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS