

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

Zaremba, 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>

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

Nõmm, Sven; Zaremba, 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 Parkinson's 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. 616-621 <https://doi.org/10.1109/CBMS58004.2023.00289> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

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](#)