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## LIST OF PUBLICATIONS<sup>1</sup>

### A Peer reviewed scientific articles

#### A1 Journal Article (refereed), original research

1. Slovak L, Panfilov E, Zahradnik D, Casula V, **Nieminen MT**, Land WM, Takehiro I, Reza A. External focus of attention reduces cartilage load during drop landings. *Scandinavian Journal of Medicine & Science in Sports*, in press.
2. Tuppurainen J, Paakkari P, Jänntti J, Nissinen MT, Fugazzola MC, van Weeren R, Ylisiurua S, **Nieminen MT**, Kröger H, Snyder BD, Joenathan A, Grinstaff M, Matikka H, Korhonen RK, Mäkelä JTA. Revealing Detailed Cartilage Function Through Nanoparticle Diffusion Imaging - A Computed Tomography & Finite Element Study. *Annals of Biomedical Engineering*, accepted.
3. Inkinen SI, Kotiaho AO, Hanni M, **Nieminen MT**, Brix MAK. Computed Tomography Artefact Detection Using Deep Learning—Towards Automated Quality Assurance. *Computed Tomography Artefact Detection Using Deep Learning—Towards Automated Quality Assurance*. In: Särestöniemi, M., et al. *Digital Health and Wireless Solutions (NCDHWS 2024)*. *Communications in Computer and Information Science* 2084:17-28, 2024. [https://doi.org/10.1007/978-3-031-59091-7\\_2](https://doi.org/10.1007/978-3-031-59091-7_2)
4. **Nieminen MT**, Brix M, Junttila J, Kettunen J, Mäkinieemi M, Reponen J. Toisiolaki – uhka, ei mahdollisuus. *Duodecim*, in press. <https://www.duodecimlehti.fi/duo18125>
5. Lehtovirta S, Kemppainen A, Haapea M, Nevalainen M, Lammentausta E, Kyllönen E, Koivukangas V, Lehenkari P, Karppinen J, Casula V, **Nieminen MT**. Effects of Bariatric Surgery on Knee Articular Cartilage and Osteoarthritis Symptoms – a 12-month follow-up using T2 relaxation time and WOMAC osteoarthritis index, *Journal of Magnetic Resonance Imaging*, accepted.
6. Kantola V, Karjalainen J, Jaakola T, Leskinen HPP, Nissi MJ, Casula V, **Nieminen MT**. Anisotropy of T2 and T1 $\rho$  Relaxation Time in Articular Cartilage at 3T. *Magnetic Resonance in Medicine*, accepted.
7. Inkinen SI, Kotiaho AO, Hanni M, **Nieminen MT**, Brix MAK. Computed tomography artefact detection using deep learning – towards automated quality assurance. *Nordic Conference on Digital Health and Wireless Solutions*. *Communications in Computer and Information Science*, accepted.

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<sup>1</sup> An up-to-date version of this list can always be found at <https://tinyurl.com/5n9bchp5>

8. Surazynski L, Hassinen V, **Nieminen MT**, Seppänen T, Myllylä T. Real-Time Tissue Classification Using a Novel Optical Needle Probe for Biopsy. *Applied Spectroscopy*, accepted. DOI: 10.1177/00037028241230568
9. Jandacka D, Casula V, Hamill J, Vilimek D, Jandackova VK, Elavsky S, Uchytel J, Plesek J, Skypala J, Golian M, Burda M, **Nieminen MT**. Regular Running Is Related to the Knee Joint Cartilage Structure in Healthy Adults, *Medicine and Science in Sports and Exercise*, in press.
10. **Nieminen MT**, Hernandez-Giron I, Anderson JS. If you can make it, you can share it - Perspectives on the first DIY-fair at the European Congress of Medical Physics (ECMP, Dublin 2022), *Physica Medica*, in press.
11. Mailhiot SE, Tolkkinen K, Henschel H, Mares J, Hanni M, **Nieminen MT**, Telkki V-V. Melting of aqueous NaCl solutions in porous materials: shifted phase transition distribution (SIDI) approach for determining NMR cryoporometry pore size distributions. *Physical Chemistry Chemical Physics* 25:13164-13169, 2024
12. Isosalo A, Inkinen SI, Heino H, Turunen T, **Nieminen MT**. MammogramAnnotationTool: Markup tool for breast tissue abnormality annotation, *Software Impacts*, in press.
13. Ylimaula S, Räsänen L, Hurskainen M, Peuna A, Julkunen P, **Nieminen MT**, Hanni M. X-ray Scatter in Projection Radiography, *Radiation Protection Dosimetry*, 11:1-10, 2023
14. Lehtovirta S, Casula V, Haapea M, Nortunen S, Lepojärvi S, Pakarinen H, **Nieminen MT**, Lammentausta E, Niinimäki J. Assessment of Articular Cartilage of Ankle Joint in Stable and Unstable Unilateral Weber Type-B/SER-type Ankle Fractures Shortly After Trauma Using T2 Relaxation Time. *Acta Radiologica Open* 12, 2023
15. Casula V, Karjalainen J, Mlynarik V, Liimatainen T, Hanni M, Oei EHG, Nissi MJ, **Nieminen MT**. Does T1 $\rho$  Measure Proteoglycan Concentration in Cartilage? Letter to Editor. *J Magn Reson Imaging* 9:1, 2023
16. Surazynski L, Nieminen HJ, Mäkinen M, **Nieminen MT**, Myllylä T. A method to detect thermal damage in bovine liver utilising diffuse reflectance spectroscopy, *Biomedical Spectroscopy and Imaging*, 10:99-112, 2023.
17. Isosalo A, Inkinen SI, Turunen T, Ipatti PS, Reponen J, **Nieminen MT**. Independent evaluation of a multi-view multi-task convolutional neural network breast cancer classification model using Finnish mammography screening data. *Computers in Biology and Medicine*, 161:107023, 2023
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20. Malus J, Urbaczka J, Rygelova M, Casula V, **Nieminen MT**, Monte A, Horcka V, Uchytel J. Effect of footwear on biomechanical risk factors for knee osteoarthritis in young adults. *The Orthopaedic Journal of Sports Medicine*, accepted.
21. Elsayed H, Karjalainen J, Nissi MJ, Ketola J, Kajabi AW, Casula V, Zbyn S, **Nieminen MT**, Hanni M. Assessing Post-traumatic Changes in Cartilage Using T1 $\rho$  Dispersion Parameters, *Magnetic Resonance Imaging* 97:91-101, 2023
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23. Hirvasniemi J, Runhaar J, van der Heijden RA, Zokaeinikoo M, Yang M, Li X, Tan J, Rajamohan HR, Zhou Y, Deniz CM, Caliva F, Iriando C, Lee JJ, Liu F, Martinez AM, Namiri N, Pedoia V, Panfilov E,

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24. Paalimäki-Paakki K, Virtanen M, Henner A, **Nieminen MT**, Kääriäinen M. Effects of 360° virtual counselling environment on CCTA patient's anxiety and process time: randomized controlled trial. *Radiography*, 29:S13-23, 2023 <https://doi.org/10.1016/j.radi.2022.09.013>
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  28. Casula V, Edwardsson Tajik B, Kvist J, Frobell R, Haapea M, M, **Nieminen MT**, Gauffin H, Englund M. Quantitative evaluation of the tibiofemoral joint cartilage by T2 mapping in patients with acute anterior cruciate ligament injury vs contralateral knees: Results from the subacute phase using data from the NACOX study cohort. *Osteoarthritis and Cartilage* 30:987-997, 2022.  
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  30. Ikävalko T, Laukkanen A-M, McAllister A, Eklund R, Lammentausta E, **Nieminen MT**. Three Professional Singers' Vocal Tract Dimensions in Operatic Singing, Kulning, and Edge—A Multiple Case Study Examining Loud Singing. *Journal of Voice* 2022.  
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  31. Väärälä A, Casula V, Peuna A, Panfilov E, Mobasher A, Haapea M, Lammentausta E, **Nieminen MT**. Predicting Osteoarthritis Onset and Progression with 3D Texture Analysis of Cartilage MRI DESS: 6-Year Data from Osteoarthritis Initiative. *J Orthop Res* 40:2597-2608, 2022  
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<https://doi.org/10.1016/j.joca.2022.01.006>
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  34. Bayramoglu N, **Nieminen MT**, Saarakkala S. Machine Learning Based Texture Analysis of Patella from X-Rays for Detecting Patellofemoral Osteoarthritis. *International Journal of Medical Informatics* 157, 2022.
  35. Panfilov E, Tiulpin A, **Nieminen MT**, Saarakkala S, Casula V. Deep learning-based segmentation of knee MRI for fully automatic subregional morphological assessment of cartilage tissues: Data from the Osteoarthritis Initiative. *Journal of Orthopaedic Research* 40(5):1113-1124, 2022.

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54. Munukka M, Waller B, Häkkinen A, **Nieminen MT**, Lammentausta E, Kujala UM, Paloneva J, Kautiainen H, Kiviranta I, Heinonen A. Effects of progressive aquatic resistance training on function and quality of life in women with knee osteoarthritis. *Scandinavian Journal of Medicine and Science in Sports*, 30:1064-1072, 2020.
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## **B Non-refereed scientific articles**

### **B1 Non-refereed journal articles**

1. Bayramoglu N, **Nieminen MT**, Saarakkala S. Machine Learning Based Texture Analysis of Patella from X-Rays for Detecting Patellofemoral Osteoarthritis. *arXiv:2106.01700*, 2021.
2. Bayramoglu N, **Nieminen MT**, Saarakkala S. Automated detection of patellofemoral osteoarthritis from knee lateral view radiographs using deep learning: Data from the Multicenter Osteoarthritis Study (MOST). *arXiv:2101.04350*, 2021
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4. Panfilov E, Tiulpin A, Klein S, **Nieminen MT**, Saarakkala S. Improving robustness of deep learning based knee MRI segmentation: Mixup and adversarial domain adaptation. *arXiv 1908.04126*, 2019

## **D Publications intended for professional communities**

### **D5 Textbook, professional manual or guide, dictionary**



1. Heikkilä J, Hippeläinen E, Kallio-Pulkkinen S, Lajunen A, Lepola P, Liukkonen E, **Nieminen M**, Peuna A, Sierpowska J, Vitikainen A-M. Suositus kuvankatselunäytöille ja niiden laadunvalvontaan. Säteilyturvakeskus; 2022. pp.33. ISBN 978-952-309-546-5.
2. **Nieminen M**, Oikarinen H, Autti T. Säteilysuojelu ja turvallisuus. In: Blanco Sequeiros R, Koskinen SK, Aronen H, Lundbom N, Vanninen O, Tervonen O (ed.): Kliininen Radiologia. Duodecim; 2016 ISBN 978-951-656-534-0
3. **Nieminen M**, Saarakkala S, Lammentausta E. Radiologisen kuvantamisen fysiikka ja tekniikka. In: Blanco Sequeiros R, Koskinen SK, Aronen H, Lundbom N, Vanninen O, Tervonen O (ed.): Kliininen Radiologia. Duodecim; 2016 ISBN 978-951-656-534-0
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5. **Nieminen MT**, Nissi MJ, Hanni M, Xia Y. Physical properties of cartilage by relaxation anisotropy. In: Xia Y & Momot K (ed.): Biophysics and Biochemistry of Cartilage by NMR and MRI. Royal Society of Chemistry; 2017. p.147-169. ISBN 978-1-78262-133-1.
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## **E. Publications intended for the general public, linked to the applicant's research**

### **E1 Popularised article, newspaper article**

**Nieminen M**. Kuvantamisen arvoketjua muovaavat uudet teknologiat. Blog text, 2021.

<https://aidmei.blogspot.com/2021/05/kuvantamisen-arvoketjua-muovaavat-uudet.html>

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Paalimäki-Paakki K, Schroderus-Salo T, **Nieminen M**. A Unique Medical Imaging Test Laboratory to Be Built in Oulu. Blog text, 2021. <https://smartcampus.fi/unique-medical-imaging-test-laboratory/> or <http://urn.fi/URN:NBN:fi-fe2021112557128>

**Nieminen MT**. Uudet magneettikuvausmenetelmät nivelrikkotutkimuksen avuksi. Nivel tieto 26th May, 2018

**Nieminen MT**, Rissanen T, Lammentausta E, Liukkonen E. Kuvantamismenetelmien uudet mahdollisuudet - radiologian tekniikan kehittyminen parantaa diagnostiikkaa. Mediuutiset 23th November 2012

## **G Theses**

### **G1 Bachelor's thesis**

**Nieminen MT.** Investigation of absolute pitch using auditive event related potentials, University of Kuopio, 1998

### **G2 Master's thesis**

**Nieminen MT.** Quantitative MRI of enzymatically treated articular cartilage, University of Kuopio, 1999

### **G5 Doctoral dissertation (article)**

**Nieminen MT.** Quantitative Magnetic Resonance Imaging of Articular Cartilage: Structural, Compositional and Functional Characterization of Normal, Degraded and Engineered Tissue, University of Kuopio, 2002.

## **H. Patents and invention disclosures**

### **H1 Patents**

Juntunen M, Inkinen S, Ketola J, **Nieminen M.** Apparatus, method and computer program for processing computed tomography (CT) scan data, Granted patent, 2022 (Finland), 2023 (Europe) <https://tinyurl.com/2aweazcp>

Surazynski L, Hassinen V, Zhao Z, Myllylä T, Mäkinen M, Nieminen HJ, **Nieminen MT.** Biopsy needle apparatus, methods of performing sampling therewith and manufacturing thereof, Granted patent, 2019 (Finland) <https://tinyurl.com/yazj89>

### **H2 Invention disclosures**

Biopsy assisting measurement system, invention disclosure, University of Oulu, 2021

Inkinen S, Juntunen M, Ketola J, **Nieminen MT.** Low dose computed tomography method based on fusion imaging, invention disclosure, University of Oulu, 2020

Liimatainen T, Hanni M, **Nieminen MT,** Tervonen O. Unstaffed X-ray imaging, invention disclosure, University of Oulu, 2020