List of publications

Peer-reviewed papers in international journals

A. Khmelinskii, E. Plenge, P. Kok, O. Dzyubachyk, T. J. A. Snoeks, D. H. J. Poot, C. W. G. M. Löwik, C. P. Botha, W. J. Niessen, E. Meijering, L. van der Weerd and B. P. F. Lelieveldt **Interactive local Super-Resolution Reconstruction of MRI whole-body mouse data: applications to bone and kidney metastases** *submitted 2013*

L. Mengler, A. Khmelinskii, M. Diedenhofen, C. Po, M. Staring, B. Lelieveldt and M. Hoehn **Brain maturation of the adolescent rat cortex and striatum: changes in volume and myelination** *NeuroImage, Volume 84, Pages 35–44 2014*

A. Khmelinskii, H. C. Groen, M. Baiker, M. de Jong and B. P. F. Lelieveldt **Segmentation and visual analysis of whole body microSPECT mouse data** *PLoS ONE, 7(11): e48976. doi:10.1371/journal.pone.0048976 2012*

T. J. Snoeks, A. Khmelinskii, B. P. F. Lelieveldt, E. L. Kaijzel and C. W. G. M. Löwik **Optical advances in skeletal imaging applied to bone metastases** *Bone, Volume 48, Issue 1, Pages: 106–114 2011*

A. Khmelinskii and M. Baiker, E. L. Kaijzel, J. Chen, J. H. C. Reiber and B. P. F. Lelieveldt **Articulated whole-body atlases for small animal image analysis: construction & applications** *Molecular Imaging and Biology, Volume 13, Issue 5, Pages: 898–910 2011*

A. Khmelinskii, R. Ventura and J. Sanches **A novel metric for bone marrow cells chromosome pairing** *IEEE Transactions on Biomedical Engineering, Volume 57, Issue 6, Pages: 1420–1429 2010*

Peer-reviewed full papers in international conference proceedings

A. Khmelinskii, L. Mengler, P. Kitslaar, M. Staring, M. Hoehn and B. Lelieveldt **A visualization platform for high-throughput, follow-up, co-registered multi-contrast MRI rat brain data** *Proceedings of SPIE Medical Imaging: Biomedical Applications in Molecular, Structural, and Functional Imaging February 9–14, Lake Buena Vista, FL, U.S.A., Pages: 8672: 86721W–86721W-7 2013*

A. Khmelinskii, E. Plenge, P. Kok, O. Dzyubachyk, D. H. J. Poot, E. Suidgeest, C. P. Botha, W. J. Niessen, L. van der Weerd, E. Meijering and B. P. F. Lelieveldt **Super-resolution reconstruction of whole-body MRI mouse data: an interactive approach** *Proceedings of the 9th IEEE International Symposium on Biomedical Imaging: From Nano to Macro, May 2–5, Barcelona, Spain, Pages: 1723–1726 2012*

A. Khmelinskii, M. Baiker, P. Kok, J. de Swart, J. H. C. Reiber, M. de Jong and B. P. F. Lelieveldt **Atlas-based articulated skeleton segmentation of μSPECT mouse data** *Proceedings of the 8th IEEE International Symposium on Biomedical Imaging: From Nano to Macro, March 30–April 2, Chicago, Illinois, U.S.A., Pages: 437–440 2011*

R. Ventura, A. Khmelinskii and J. Sanches **Classifier-assisted metric for chromosome pairing** *Proceedings of the IEEE EMBC'10 – 32nd Annual International Conference of the IEEE EMBS, August 31–September 4, Buenos Aires, Argentina, Pages: 6729–6732 2010*

A. Khmelinskii, M. Baiker, X.J. Chen, J. H. C. Reiber, R. M. Henkelman and B. P. F. Lelieveldt **Atlas-based organ & bone approximation for ex-vivo μMRI mouse data: a pilot study** *Proceedings of the 7th IEEE International Symposium on Biomedical Imaging: From Nano to Macro, April 14–17, Rotterdam, the Netherlands, Pages: 1197–1200 2010*

A. Khmelinskii, R. Ventura and J. Sanches **Automatic chromosome pairing using mutual information** *Proceedings of the IEEE EMBC'08—30th Annual International Conference of the IEEE EMBS, August 20–24, Vancouver, Canada, Pages: 1918–1921 2008*

A. Khmelinskii, R. Ventura and J. Sanches **Chromosome pairing for karyotyping purposes using mutual information** *Proceedings of the 5th IEEE International Symposium on Biomedical Imaging: From Nano to Macro, May 14–17, Paris, France, Pages: 484–487 2008*

Data made publicly available

Lisbon K-1 chromosome dataset
http://mediawiki.isr.ist.utl.pt/wiki/Lisbon-K_Chromosome_Dataset

Articulated small animal's skeletons
www.lkeb.nl

Conference abstracts

D. I. Bink, K. A. Ritz, C. Mackaaij, C. M. van der Loos, O. J. de Boer, A. Khmelinskii, L. van der Weerd and M. J. A. P. Daemen **The effect of cardiovascular risk factors and cerebral hypoperfusion on brain structure and cognitive functioning** *Cardio Vasculaire Conferentie, March 14–15, Noordwijkerhout, the Netherlands 2013*

D. I. Bink, K. A. Ritz, C. Mackaaij, C. M. van der Loos, O. J. de Boer, A. Khmelinskii, L. van der Weerd and M. J. A. P. Daemen **The effect of cardiovascular disease and cerebral hypoperfusion on the brain** *European Society of Cardiology Congress, August 31–September 4, Amsterdam, the Netherlands 2013*

L. Mengler, A. Khmelinskii, M. Diedenhofen, C. Po, M. Staring, B. P. F. Lelieveldt and M. Hoehn **When is a young rat brain adult? Volume and myelination**

changes in cortex and striatum *European Molecular Imaging Meeting, May 26–28, Torino, Italy 2013*

D. I. Bink, K. A. Ritz, L. van der Weerd, A. Khmelinskii and M. J. A. P. Daemen **The effect of cardiovascular risk factors and cerebral hypoperfusion on brain structure and cognitive functioning** *3rd Rembrandt Symposium, November 29, Noordwijkerhout, the Netherlands 2012*

H. C. Groen, A. Khmelinskii, M. de Jong and B. P. F. Lelieveldt **Segmentation of whole-body microSPECT mouse skeleton scans** *Annual Congress of the European Association of Nuclear Medicine, October 27–31, Milan, Italy 2012*

H. C. Groen, A. Khmelinskii, S. Berndsen, B. P. F. Lelieveldt and M. de Jong **Comparison of manual and automatic quantification of bone 99mTc-HDP SPECT/CT mouse scan** *Annual Congress of the European Association of Nuclear Medicine, October 27–31, Milan, Italy 2012*

H. C. Groen, A. Khmelinskii, M. de Jong and B. P. F. Lelieveldt **Segmentation of whole-body microSPECT mouse skeleton images** *World Molecular Imaging Congress, September 5–8, Dublin, Ireland 2012*

H. C. Groen, A. Khmelinskii, S. Berndsen, B. P. F. Lelieveldt and M. de Jong **Comparison of manual and automatic quantification of bone 99mTc-HDP SPECT/CT mouse scans** *World Molecular Imaging Congress, September 5–8, Dublin, Ireland 2012*

A. Khmelinskii, E. Plenge, P. Kok, D. Poot, O. Dzyubachyk, C. P. Botha, E. Suidgeest, W. Niessen, L. van der Weerd, E. Meijering and B. P. F. Lelieveldt **Towards interactive super-resolution resolution reconstruction of whole-body MRI mouse data** *International Society for Magnetic Resonance in Medicine, Annual Meeting & Exhibition, May 5–11, Melbourne, Australia 2012*

A. Khmelinskii, H. C. Groen, M. de Jong and B. P. F. Lelieveldt **Segmentation of whole-body microSPECT mouse data** *Hot Topics in Molecular Imaging, April 15–20, Les Houches, France 2012*

A. Khmelinskii, E. Plenge, P. Kok, O. Dzyubachyk, D. Poot, E. Suidgeest, C. P. Botha, W. Niessen, L. van der Weerd, E. Meijering and B. P. F. Lelieveldt **Super-resolution reconstruction of whole-body MRI mouse data** *Hot Topics in Molecular Imaging, April 15–20, Les Houches, France 2012*

L. Mengler, A. Khmelinskii, C. Po, M. Staring, B. Lelieveldt and M. Hoehn **Mapping postadolescent brain development in rat frontal cortex: changes in volume and cell density** *Neuroscience, November 12–18, Washington, DC, U.S.A. 2011*

A. Khmelinskii, L. Mengler, P. Kitslaar, M. Staring, C. Po, J. H. C. Reiber, M. Hoehn and B. Lelieveldt **Interactive system for exploration of multi-modal rat brain data** *European Molecular Imaging Meeting, June 19–21, Leiden, the Netherlands 2011*

L. Mengler, A. Khmelinskii, C. Po, M. Staring, J. H. C. Reiber, B. Lelieveldt and M. Hoehn **Juvenile development and ageing mediated changes in cortical structure and volume in the rat brain** *European Molecular Imaging Meeting, June 19–21, Leiden, the Netherlands 2011*

T. J. Snoeks, A. Khmelinskii, I. Que, B. P. F. Lelieveldt, E. L. Kaijzel and C. W. G. M. Löwik **A method to follow tumor growth and tumor induced bone loss simultaneously over time, in vivo, using whole body bioluminescence fluorescence imaging** *10th International Conference on Cancer-Induced Bone Disease, September 22–25, Sheffield, United Kingdom, 2010, Bone, Volume 48, Issue 1, Pages: S49–S50 2011*

T. Snoeks, A. Khmelinskii, I. Que, B. P. F. Lelieveldt, E. Kaijzel and C. Löwik **A method to follow tumor induced bone loss over time, in vivo, using whole body fluorescence imaging** *World Molecular Imaging Congress, September 8–11, Kyoto, Japan 2010*

A. Khmelinskii, R. Ventura and J. Sanches **Chromosome pairing using mutual information in bone marrow cells** *Proceedings of the 15th Portuguese Conference on Pattern Recognition, October 23, Aveiro, Portugal 2009*

A. Khmelinskii, R. Ventura, M. Carmo-Fonseca and J. Sanches, **Automatic pairing of metaphase chromosomes with mutual information for karyotyping purposes,** *1st Annual Portuguese Forum on Computational Biology, Gulbenkian Institute of Science, July 10–12, Oeiras, Portugal 2008*

A. Khmelinskii, R. Ventura and J. Sanches, **Chromosome pairing for karyotyping purposes,** *Proceedings of the 13th Portuguese Conference on Pattern Recognition, October 26, Lisbon, Portugal 2007*

Thesis

A. Khmelinskii, **Multi-modal small-animal imaging: image processing challenges and applications,** Ph.D., *Leids Universitair Medisch Centrum, Universiteit Leiden, October 9, Leiden, the Netherlands 2013*

A. Khmelinskii, **Chromosome pairing for karyotyping purposes,** M.Sc., *Instituto Superior Técnico, November 14, Lisbon, Portugal 2007*

Curriculum vitae

Artem Khmelinskii was born in Novosibirsk, Russia, on April 8, 1984. After obtaining his high-school diploma in natural sciences from Escola Secundária João de Deus, Faro, Portugal, he began his studies in Biomedical Engineering at Instituto Superior Técnico (IST), Universidade Técnica de Lisboa, Lisbon, Portugal. He received his M. Sc. degree in November 2007 and continued his research on the subject of chromosome pairing in the same Institute for Systems and Robotics–IST from November 2007 till June 2008. From June 1st 2008 till now 2013 he's been a researcher and a Ph. D. student in the section of Kennisgestuurde Beeldverwerking (KGB) at the LKEB–LUMC, Universiteit Leiden, Leiden, the Netherlands. The results of his work on image processing applied to multi-modal small animal imaging are described in this thesis