

Melanie Ganz-Benjaminsen  
Visiting Researcher  
Department of Computer Science  
Postal address:  
Universitetsparken 5, 2100 København Ø  
Email: Ganz@di.ku.dk  
Web: <http://image.diku.dk/ganz/>



## Qualifications

Medical Image Analysis, PhD Computer Science, University of Copenhagen  
1 Mar 2008 → 27 May 2011

Physics, Master of Science, Karlsruhe Institute of Technology  
Oct 2002 → 21 Sep 2007

## Employment

### PostDoc abroad

Postdoc  
Department of Computer Science  
København Ø, Denmark  
1 Nov 2011 → 31 Oct 2013

### Assistant professor

Department of Computer Science  
København Ø, Denmark  
9 Nov 2017 → 30 Sep 2020

### Researcher

Rigshospitalet  
København, Denmark  
1 May 2017 → nu

### Postdoctoral Fellow

Rigshospitalet  
København, Denmark  
1 Jan 2014 → 30 Apr 2017

### Postdoctoral Research Fellow

Harvard Medical School  
Boston, United States  
1 Nov 2011 → 31 Oct 2013

### Research and Development intern

Medicsight PLC  
London, United Kingdom  
1 May 2011 → 1 Sep 2011

## Publications

**Cerebral serotonin transporter measurements with [ $^{11}\text{C}$ ]DASB: A review on acquisition and preprocessing across 21 PET centres**

Nørgaard, M., Ganz, M., Svarer, C., Feng, L., Ichise, M., Lanzenberger, R., Lubberink, M., Parsey, R. V., Politis, M., Rabiner, E. A., Slifstein, M., Sossi, V., Suhara, T., Talbot, P. S., Turkheimer, F., Strother, S. C. & Knudsen, G. M., 2019, In : Journal of Cerebral Blood Flow and Metabolism. 39, 2, p. 210-222 13 p.

### **Multi-view Consensus CNN for 3D Facial Landmark Placement**

Paulsen, R. R., Juhl, K. A., Haspang, T. M., Hansen, T., Ganz, M. & Einarsson, G., 2019, *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*. Springer, p. 706-719 14 p. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Vol. 11361 LNCS).

### **Optimization of preprocessing strategies in Positron Emission Tomography (PET) neuroimaging: A [<sup>11</sup>C]DASB PET study**

Nørgaard, M., Ganz, M., Svarer, C., Frokjaer, V. G., Greve, D. N., Strother, S. C. & Knudsen, G. M., 2019, In : *NeuroImage*. 199, p. 466-479 14 p.

### **Pre-intervention test-retest reliability of EEG and ERP over four recording intervals**

Ip, C-T., Ganz, M., Ozenne, B., Sluth, L. B., Gram, M., Viardot, G., l'Hostis, P., Danjou, P., Knudsen, G. M. & Christensen, S. R., 1 Dec 2018, In : *International Journal of Psychophysiology*. 134, p. 30-43

### **Comparing fully automated state-of-the-art cerebellum parcellation from magnetic resonance images**

Carass, A., Cuzzocreo, J. L., Han, S., Hernandez-Castillo, C. R., Rasser, P. E., Ganz, M., Beliveau, V., Dolz, J., Ben Ayed, I., Desrosiers, C., Thyreau, B., Romero, J. E., Coupé, P., Manjón, J. V., Fonov, V. S., Collins, D. L., Ying, S. H., Onyike, C. U., Crocetti, D., Landman, B. A., Mostofsky, S. H., Thompson, P. M. & Prince, J. L., 2018, In : *NeuroImage*. 183, p. 150-172 23 p.

### **The Impact of Preprocessing Pipeline Choice in Univariate and Multivariate Analyses of PET Data**

Nørgaard, M., Greve, D. N., Svarer, C., Strother, S. C., Knudsen, G. M. & Ganz, M., 2018, *2018 International Workshop on Pattern Recognition in Neuroimaging, PRNI 2018*. IEEE, 4 p. 8423962

### **Brain Networks Implicated in Seasonal Affective Disorder: A Neuroimaging PET Study of the Serotonin Transporter**

Nørgaard, M. A., Ganz, M., Svarer, C., Fisher, P. M., Churchill, N. W., Beliveau, V., Grady, C. L., Strother, S. C. & Knudsen, G. M., 3 Nov 2017, In : *Frontiers in Neuroscience*. 11, 614

### **Cerebellar heterogeneity and its impact on PET data quantification of 5-HT receptor radioligands**

Ganz, M., Feng, L., Hansen, H. D., Beliveau, V., Svarer, C. & Knudsen, G. M., Sep 2017, In : *Journal of Cerebral Blood Flow and Metabolism*. 37, 9

### **Permutation tests for classification: Revisited**

Ganz, M. & Konukoglu, E., 14 Jul 2017, *2017 International Workshop on Pattern Recognition in Neuroimaging, PRNI 2017*. Institute of Electrical and Electronics Engineers Inc., (2017 International Workshop on Pattern Recognition in Neuroimaging, PRNI 2017).

### **A High-Resolution *In Vivo* Atlas of the Human Brain's Serotonin System**

Beliveau, V., Ganz-Benaminsen, M., Feng, L., Ozenne, B., Højgaard, L., Fisher, P. M., Svarer, C., Greve, D. N. & Knudsen, G. M., 4 Jan 2017, In : *The Journal of Neuroscience*. 37, 1, p. 120-128 9 p.

### **Crowdsourcing for error detection in cortical surface delineations**

Ganz, M., Kondermann, D., Andrulis, J., Knudsen, G. M. & Maier-Hein, L., Jan 2017, In : *International Journal of Computer Assisted Radiology and Surgery*. 12, 1, p. 161-166

### **BASELINE RELIABILITY OF EEG AND ERP IN A FOUR-WAY CROSSOVER STUDY IN HEALTHY SUBJECTS**

Ip, C., Ganz, M., Ozenne, B., Sluth, L., Gram, M., Viardot, G., l'Hostis, P., Danjou, P., Knudsen, G. & Christensen, S., 2017, p. S59. 1 p.

### **Brain Networks involved in Seasonal Affective Disorder: A Neuroimaging PET Study of 5-HTT Expression**

Nørgaard, M. A., Svarer, C., Ganz, M., McMahon, B., Fisher, P. M., Churchill, N. W., Beliveau, V., Grady, C. L., Strother, S. C. & Knudsen, G. M., 2017.

### **Permutations Tests for Binary Classification:Revisited**

Ganz, M. & Konukoglu, E., 2017, (Accepted/In press) *Proceedings of the 2017 International Workshop on Pattern Recognition in Neuroimaging (PRNI)*.

### **Vermis - to exclude or not exclude? Defining a proper reference region for PET modelling of the serotonin system**

Ganz, M., Hansen, H. D., Beliveau, V., Feng, L., Svarer, C. & Knudsen, G. M., 28 Jun 2015.

### **High-resolution surface and volume-based in vivo atlas of the serotonin system in the healthy brain**

Beliveau, V., Ganz, M., Svarer, C., Knudsen, G. M. & Greve, D. N., 18 Jun 2015.

### **Estimation of Regional Seasonal Variations in SERT-levels using the FreeSurfer PET pipeline: a reproducibility study**

Nørgaard, M., Ganz-Benjaminsen, M., Svarer, C., Beliveau, V., Fisher, P. M. D., McMahon, B., Greve, D. N., Strother, S. C. & Knudsen, G. M., 2015, *Proceedings of the MICCAI workshop on Computational Methods for Molecular Imaging 2015*.

### **Relevant feature set estimation with a knock-out strategy and random forests**

Ganz, M., Greve, D. N., Fischl, B. & Konukoglu, E., 2015, In : *NeuroImage*. 122

### **Serotonin 2A receptor agonist binding in the human brain with [11C]Cimbi-36: test-retest reproducibility and comparison with [18F]altanserin**

Ettrup, A., Svarer, C., McMahon, B., da Cunha-Bang, S., Lehel, S., Møller, K., Dyssegaard, A., Ganz, M., Beliveau, V., Jørgensen, L. M., Gillings, N. & Knudsen, G. M., 2015.

### **Approximate false positive rate control in selection frequency for random forest**

Konukoglu, E. & Ganz, M., 2014, In : *arXiv.org*.

### **An improved optimization method for the relevance voxel machine**

Ganz, M., Sabuncu, M. R. & Van Leemput, K., 2013, *Machine Learning in Medical Imaging: 4th International Workshop, MLMI 2013, Held in Conjunction with MICCAI 2013, Nagoya, Japan, September 22, 2013. Proceedings*. Wu, G., Zhang, D., Shen, D., Yan, P., Suzuki, K. & Wang, F. (eds.). Springer, p. 147-154 8 p. (Lecture notes in computer science, Vol. 8184).

### **On feature relevance in image-based prediction models: an empirical study**

Konukoglu, E., Ganz, M., Van Leemput, K. & Sabuncu, M. R., 2013, *Machine Learning in Medical Imaging: 4th International Workshop, MLMI 2013, Held in Conjunction with MICCAI 2013, Nagoya, Japan, September 22, 2013. Proceedings*. Wu, G., Zhang, D., Shen, D., Yan, P., Suzuki, K. & Wang, F. (eds.). Springer Publishing Company, p. 171-178 8 p. (Lecture notes in computer science, Vol. 8184).

### **The improved relevance voxel machine**

Ganz, M., Sabuncu, M. & Leemput, K. V., 2013, Technical University of Denmark. 19 p. (DTU Compute Technical Report, Vol. 2013-10).

### **Automatic Segmentation of Polyps in Colonoscopic Narrow-Band Imaging Data**

Ganz, M., Yang, X. & Slabaugh, G., Aug 2012, In : *IEEE Transactions on Biomedical Engineering*. 59, 8, p. 2144 - 2151

### **A Bayesian framework for automated cardiovascular risk scoring on standard lumbar radiographs**

Petersen, P. K., Ganz, M., Mysling, P., Nielsen, M., Erleben, L. L., Crimi, A. & Brandt, S. S., 2012, In : *IEEE Transactions on Medical Imaging*. 31, 3, p. 663-676 14 p.

### **Distribution, size, and shape of abdominal aortic calcified deposits and their relationship to mortality in postmenopausal women**

Ganz, M., de Bruijne, M., Dam, E. B., Pettersen, P., Karsdal, M. A., Christiansen, C. & Nielsen, M., 2012, In : *International Journal of Biomedical Imaging*. 2012, 8 p., 459286.

### **Abdominal aortic calcification quantified by the Morphological Atherosclerotic Calcification Distribution (MACD) index is associated with features of the metabolic syndrome**

Barascuk, N., Ganz, M., Nielsen, M., Register, T. C., Rasmussen, L. M., A. Karsdal, M. & Christiansen, C., 2011, In : B M C Cardiovascular Disorders. 11, 9 p., 11.

### **Automated Detection and Analysis of Calcified Deposits and Their Relation to Cardiovascular Diseases**

Ganz, M., 2011

### **Distribution, size, and shape of abdominal aortic calcified deposits and their relationship to mortality in postmenopausal women**

Nielsen, M., Ganz, M., de Bruijne, M., Dam, E., Karsdal, M. & Christiansen, C., 2011. 1 p.

### **Distribution, size, shape, growth potential and extent of abdominal aortic calcified deposits predict mortality in postmenopausal women**

Nielsen, M., Ganz, M., Lauze, F. B., Pettersen, P. C., de Bruijne, M., Clarkson, T. B., Dam, E. B., Christiansen, C. & Karsdal, M. A., 2010, In : BMC Cardiovascular Disorders. 10, 10 p., 56.

### **Growth patterns of abdominal atherosclerotic calcified deposits from lumbar lateral X-rays**

Erleben, L. L., Ganz, M., Barascuk, N., Dam, E. B. & Nielsen, M., 2010, In : International Journal of Cardiovascular Imaging. 26, 7, p. 751-761 11 p.

### **MACD - an imaging marker for cardiovascular disease**

Ganz, M., de Bruijne, M. & Nielsen, M., 2010, *Medical Imaging 2010: computer-aided diagnosis*. Karssemeijer, N. & Summers, R. M. (eds.). SPIE - International Society for Optical Engineering, 9 p. 76240

### **Patch-based generative shape model and MDL model selection for statistical analysis of archipelagos**

Ganz, M., Nielsen, M. & Brandt, S., 2010, *Machine Learning in Medical Imaging: First International Workshop, MLMI 2010, Held in Conjunction with MICCAI 2010, Beijing, China, September 20, 2010. Proceedings*. Wang, F., Yan, P., Suzuki, K. & Shen, D. (eds.). Springer, p. 34-41 8 p. (Lecture notes in computer science, Vol. 6357).

### **BMD PREDICTION OF DEATH IS ENCAPSULATED BY THE MORPHOLOGICAL ATHEROSCLEROSIS CALCIFICATION DISTRIBUTION (MACD) INDEX**

Ganz, M., Nielsen, M., Karsdal, M. & Christiansen, C., 2009, In : Bone. suppl. 2, p. S265 1 p.

### **Dense Iterative Contextual Pixel Classification using Kriging**

Ganz, M., Loog, M., Brandt, S. & Nielsen, M., 2009, *IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops, 2009. CVPR Workshops 2009*. . p. 87-93 7 p.

### **Growth analysis of individual abdominal atherosclerotic calcified deposits**

Larsen, L. L., Ganz, M. & Nielsen, M., 2009. 1 p.

### **Automated Quantification of the Morphological Atherosclerotic Calcification Distribution on X-Rays Is a Strong Predictor of Mortality in Postmenopausal Women**

Christiansen, C., Karsdal, M., Lauze, F. B., Dam, E., Ganz, M., de Bruijne, M., Sørensen, M., Barascuk, N. & Nielsen, M., 2008, In : Arteriosclerosis, Thrombosis, and Vascular Biology. 6, p. e48-e48 1 p.

### **Growth Pattern of Atherosclerotic Calcifications**

Larsen, L. L., Ganz, M., Dam, E., Dandu, N. & Nielsen, M., 2008, *CVII '08: Second International Workshop on Computer vision for intracardiac and intravascular imaging, held in New York, USA, September 10, 2008 in conjunction with the 11th MICCAI conference*. Sabancı Üniversitesi. 34956 Tuzla, Istanbul, p. 63-70

### **Morphological Atherosclerosis Calcification Distribution (MACD) Index is a Strong Predictor of Cardio-Vascular Death and Include Predictive Power of BMD**

Christiansen, C., Karsdal, M., Ganz, M., Dam, E. & Nielsen, M., 2008. 1 p.

### **Superior assessment of CVD death by MACD index compared with the framingham score is highly associated with predisposition to diabetes**

Soltyskiska, E., Barascuk, N., Ganz, M., Nielsen, M., Karsdal, M. & Christiansen, C., 2008. 1 p.