Augustin OGIER

05/10/1993 – 27 years old
Marseille, France
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PostDoc in Computer Science and Medical Imaging

PROFESSIONAL EXPERIENCE

2021 – 2025 ***(current)***
POSTDOC POSITION – *CHUV, Lausanne, Switzerland*
Supervisor: Ruud van Heeswijk
Subject: Developing whole-heart quantitative MRI to characterize heart failure with preserved ejection fraction

2020 - 2021
TEMPORARY RESEARCH AND TEACHING ASSISTANT (ATER) – *POLYTECH, LIS - UMR 7020, Marseille, France*

2017 - 2021
PhD STUDENT – *AIX MARSEILLE UNIVERSITY/MENESR, LIS - UMR 7020, Marseille, France*
Supervisor: David Bendahan and Marc-Emmanuel Bellemare
Subject: Segmentation and characterization of deformations of soft tissue organ from MRI: Applications to muscle imaging and pelvic imaging.

2017 ***(6 months)***
RESEARCH ENGINEER – *PROTISVALOR, CRMBM - UMR 7339, Marseille, France*
> Analysis of muscle MRI data
> Development of segmentation methods based on registration (multi-atlas, transversal and longitudinal propagation)
> Characterization of neuromuscular diseases via the quantification of individual muscle volumes and quantification of fatty muscle infiltration through analysis of several maps (T_2, T_2*, MTR, PDFF) reconstructed from different sequences

2016 ***(6 months)***
ENGINEER INTERN – *CNRS, CRMBM - UMR 7339, Marseille, France*
> Development of segmentation tools for MRI images of muscle based on non-linear registration approaches
> Original contribution of a semi-automatic segmentation algorithm based on nonlinear registration approaches
> Python, ANTs Library, FSL-FMRIB Software Library, FreeSurfer Software Suite, BrainVISA-Anatomist

EDUCATION BACKGROUND

2015 – 2016
MASTER OF APPLIED SCIENCE, COMPUTER AND ELECTRICAL ENGINEERING – *UNIVERSITY OF SHERBROOKE, Canada*
> Bioengineering; Agile development methods; Microprogram in Engineering Project Management

2011 – 2016
GENERAL ENGINEER – *INSTITUT SUPERIEUR DE L'ÉLECTRONIQUE ET DU NUMERIQUE (ISEN), Brest, France*
> Specialization in medical and health technologies (image processing, medical imaging, bioinformatics)

SKILLS

Computer Science
Python, MATLAB, C, C++ (OpenCV), Java
GIMP, LaTeX, Git, PHP, JavaScript, HTML, CSS

Image Processing
Image segmentation, Image registration, Deep learning
ANTs Library, FSL-FMRIB Software Library, FreeSurfer Software Suite, BrainVISA-Anatomist

Project Management
Agile Methodologies, Scrum
Microprogram in Engineering Project Management (*University of Sherbrooke, Canada)*

Language
French: Mother tongue
English: Full professional proficiency (*First Certificate of Cambridge)*

TEACHING

2020 - 2021
CYCLES PRÉPARATOIRES **and COMPUTER SCIENCE ENGINEERING DEPARTMENT** – POLYTECH, *Marseille, France*
> Introduction to computer science tools (L1): 100h, Algorithms and Programming in Python (L2): 32h, Object-Oriented Programming in Java (M1): 40h

2017 - 2020
COMPUTER SCIENCE AND INTERACTIONS DEPARTMENT – *AIX MARSEILLE UNIVERSITY, Marseille, France*
> Introduction to Computer Science (L1): 22h, Introduction to Programming (L1): 10h, Python programming (M1): 60h, Algorithms and Programming (M1): 36h, Web Development (L2, L3): 64h

2017- 2021
SUPERVISION OF 4 STUDENTS IN MASTER INTERNSHIP – *CRMBM - UMR 7339, LIS - UMR 7020, Marseille, France*

AWARD AND COMMUNITY

2019 **BEST POSTER AWARD**
17èmes journées de la Société Française de Myologie (JSFM), Nov 2019, Marseille, France

Member of the following scientific associations: IEEE Engineering in Medicine and Biology Society Membership (EMBS), Groupement de Recherche en Traitement du Signal et des Images (GRETSI), Société Francaise de Résonance Magnétique en Biologie et Médecine (SFRMBM), Société Française de Myologie (SFM).

Reviewer: Scientific Reports

PATENT

[1] A. Le Troter, D. Bendahan, A. C. Ogier, "METHOD AND DEVICE FOR SEGMENTING IMAGES BY AUTOMATIC PROPAGATION INTO AN (N+1)-TH DIMENSION OF AN IMAGE SEGMENTATION INITIALIZED IN DIMENSION N", 2019, Patent n°WO/2019/012220

JOURNAL ARTICLES

[2] A. C. Ogier, M.-A. Hostin, M.-E. Bellemare, D. Bendahan, "Overview of MR Image Segmentation Strategies in Neuromuscular Disorders", Frontiers in Neurology, 2021, DOI: 10.3389/fneur.2021.625308

[3] E. Soldati, L. Escoffier, S. Gabriel, A. C. Ogier, C. Chagnaud, J.-C.Mattei, S. Cammilleri, D. Bendahan, S. Guis, "Assessment of in vivo bone microarchitecture changes in an anti-TNFα treated psoriatic arthritic patient", PLoS ONE, 2021, DOI: 10.1371/journal.pone.0251788

[4] E. Fortanier, A. C. Ogier, E. Delmont, M.-N. Lefebvre, P. Viout, M. Guye, D. Bendahan, S. Attarian, "Quantitative assessment of sciatic nerve changes in CMT1A patients using magnetic resonance neurography", European Journal of Neurology, 2020, DOI: 10.1111/ene.14303

[5] B. Ansari, E. Salort-Campana, A. C. Ogier, A. Le Troter, B. de Sainte Marie, M. Guye, E. Delmont, A.-M. Grapperon, Annie Verschueren, Bendahan D., S. Attarian, "A Quantitative muscle MRI Study of Patients with Sporadic Inclusion Body Myositis", Muscle & nerve. Supplement., 2020, DOI: 10.1002/mus.26813

[6] J. Bas, A. C. Ogier, A. Le Troter, E. Delmont, B. Leporq, L. Pini, M. Guye, A. Parlanti, M.-N.Lefebvre, D. Bendahan, S. Attarian, "Fat fraction distribution in lower limb muscles of patients with CMT1A", Neurology, 2020, DOI: 10.1212/WNL.0000000000009013

[7] L. Secondulfo, A. C. Ogier, J. Monte, V. Aengevaeren, D. Bendahan, A. Nederveen, G. Strijkers, M. Hooijmans, "Supervised segmentation framework for evaluation of diffusion tensor imaging indices in skeletal muscle", NMR in Biomedicine, 2020, DOI: 10.1002/nbm.4406

[8] E. Brui, A. Efimtcev, V. Fokin, Remi Fernandez, Anatoliy Levchuk, A. C. Ogier, A. Samsonov, J.-C.Mattei, I. Melchakova, D. Bendahan, A. Andreychenko, "Deep learning-based fully automatic segmentation of wrist cartilage in MR images", NMR in Biomedicine, 2020, DOI: 10.1002/nbm.4320

[9] A. Foure, A. Troter, A. C. Ogier, M. Guye, J. Gondin, D. Bendahan, "Spatial difference can occur between activated and damaged muscle areas following electrically-induced isometric contractions", The Journal of Physiology, 2019, DOI: 10.1113/JP278205

[10] A. C. Ogier, L. Heskamp, C. Michel, A. Fouré, M.-A. Bellemare, A. Troter, A. Heerschap, D. Bendahan, "A novel segmentation framework dedicated to the follow-up of fat infiltration in individual muscles of patients with neuromuscular disorders", Magnetic Resonance in Medicine, 2019, DOI: 10.1002/mrm.28030

[11] A. Fouré, A. C. Ogier, M. Guye, J. Gondin, D. Bendahan, "Muscle alterations induced by electrostimulation are lower at short quadriceps femoris length", European Journal of Applied Physiology, 2019, DOI: 10.1007/s00421-019-04277-5

[12] A. Fouré, L. Pini, S. Rappacchi, A. C. Ogier, J.-C. Mattei, M. Bydder, M. Guye, D. Bendahan, "Ultrahigh-Field Multimodal MRI Assessment of Muscle Damage", Journal of Magnetic Resonance Imaging, 2019, DOI: 10.1002/jmri.26222

[13] C. Gineste, A. C. Ogier, I. Varlet, Z. Hourani, M. Bernard, H. Granzier, D. Bendahan, J. Gondin, "In vivo characterization of skeletal muscle function in nebulin-deficient mice", Muscle and Nerve, 2019, DOI: 10.1002/mus.26798

[14] A. Fouré, A. C. Ogier, A. Le Troter, C. Vilmen, T. Feiweier, M. Guye, J. Gondin, P. Besson, D. Bendahan, "Diffusion Properties and 3D Architecture of Human Lower Leg Muscles Assessed with Ultra-High-Field-Strength Diffusion-Tensor MR Imaging and Tractography: Reproducibility and Sensitivity to Sex Difference and Intramuscular Variability", Radiology, 2018, DOI: 10.1148/radiol.2017171330

[15] A. Messineo, C. Gineste, T. Sztal, E. Mcnamara, C. Vilmen, A. C. Ogier, D. Hahne, D. Bendahan, N. Laing, R. Bryson-Richardson, J. Gondin, K. Nowak, "L-tyrosine supplementation does not ameliorate skeletal muscle dysfunction in zebrafish and mouse models of dominant skeletal muscle α-actin nemaline myopathy", Scientific Reports, 2018, DOI: 10.1038/s41598-018-29437-z

CONFERENCE PAPERS

[16] K. Makki, A. Bohi, A. C. Ogier, M.-E. Bellemare, "A new geodesic-based feature for characterization of 3D shapes: application to soft tissue organ temporal deformations", 25th International Conference on Pattern Recognition (ICPR), Jan 2021, Milan, Italy, DOI: 10.1109/ICPR48806.2021.9412922

[17] A. C. Ogier, S. Rapacchi, A. Le Troter, M.-E. Bellemare, "3D Dynamic MRI for Pelvis Observation - a First Step", The 16th IEEE International Symposium on Biomedical Imaging (ISBI), Apr 2019, Venice, Italy, DOI: 10.1109/ISBI.2019.8759589

[18] A. Ogier, M. Sdika, A. Fouré, A. Le Troter, D. Bendahan, "Individual muscle segmentation in MR Images: a 3D propagation through 2D non-linear registration approaches", International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Jeju, S. Korea, July 2017, DOI: 10.1109/EMBC.2017.8036826

INTERNATIONAL CONGRESS

[19] L. Heskamp, A. C. Ogier, D. Bendahan, A. Heerschap, "Muscular fat infiltration in FSHD starts with a “fat burst” near the distal tendon and advances towards the proximal tendon", International Society for Magnetic Resonance in Medicine (ISMRM), Aug 2020, Online, United States

[20] L. Heskamp, A. C. Ogier, D. Bendahan, A. Heerschap, "Muscular fat infiltration in FSHD starts with a ‘‘fat burst’’ near the distal tendon and advances towards the proximal tendon", The 37th Annual Scientific Meeting of European Society for Magnetic Resonance in Medicine and Biology (ESMRMB), Sep 2020, Online, Austria

[21] A. Fouré, A. Le Troter, A. C. Ogier, D. Bendahan, "Areas of muscle tissue alteration can differ from activated regions during electrically-induced isometric contractions", MYO-MRI, Imaging in Neuromuscular Disease, Nov 2019, Berlin, Germany

[22] L. Heskamp, A. C. Ogier, A. Le Troter, D. Bendahan, A. Heerschap, "Intramuscular Pattern of Fat Infiltration Measured by MRI to Identify Disease Initiation in FSHD", MYO-MRI, Imaging in Neuromuscular Disease, Nov 2019, Berlin, Germany

[23] L. Heskamp, A. C. Ogier, A. Le Troter, D. Bendahan, A. Heerschap, "Intramuscular pattern of fat infiltration measured by MRI to identify disease initiation in FSHD", FSH Society International Research Congress, Jun 2019, Marseille, France

[24] J. Bas, A. C. Ogier, A. Le Troter, E. Delmont, B. Leporq, L. Pini, M. Guye, A. Parlanti, M.-E. Lefebvre, D. Bendahan, S. Attarian, "Fat fraction distribution in lower limb muscles of CMT1A patients: a quantitative MRI study", MYO-MRI, Imaging in Neuromuscular Disease, Nov 2019, Berlin, Germany

[25] A. C. Ogier, L. Heskamp, A. Fouré, M.-E. Bellemare, A. Le Troter, A. Heerschap, D. Bendahan, "Semi-automatic segmentation of individual muscles in MR images: A new tool dedicated to the follow-up of patients with neuromuscular disorders", International Society for Magnetic Resonance in Medicine (ISMRM), Jun 2018, Paris, France

[26] A. Fouré, A. C. Ogier, A. Le Troter, C. Vilmen, T. Feiweier, M. Guye, J. Gondin, P. Besson, D. Bendahan, "Intramuscular variability and sex difference in diffusion properties and 3D architecture of human lower leg muscles assessed with ultra-high-field diffusion tensor imaging and tractography", International Society for Magnetic Resonance in Medicine (ISMRM), Jun 2018, Paris, France

[27] A. Fouré, A. C. Ogier, A. Le Troter, T. Feiweier, C. Vilmen, M. Guye, J. Gondin, P. Besson, D. Bendahan, "3D architecture of human lower leg muscles assessed with ultra-high-field diffusion tensor imaging and tractography: sensitivity to sex difference and intramuscular variability", MYO-MRI, Imaging in Neuromuscular Disease, Nov 2017, Berlin, Germany

[28] A. C. Ogier, A. Fouré, M. Sdika, A. Le Troter, D. Bendahan, "An accurate supervised segmentation of 3D individual lower leg muscles from 7T-MRI using label propagation", MYO-MRI, Imaging in Neuromuscular Disease, Nov 2017, Berlin, Germany

[29] A. C. Ogier, A. Fouré, M. Sdika, A. Le Troter, D. Bendahan, "3D MRI Segmentation of muscle through 2D multi-label propagation at 7T", The 34th Annual Scientific Meeting - European Society for Magnetic Resonance in Medicine and Biology (ESMRMB), Oct 2017, Barcelone, Spain

NATIONAL CONGRESS

[30] E. Fortanier, A. C. Ogier, M.-E. Lefebvre, E. Delmont, D. Bendahan, S. Attarian, "Neurographie IRM quantitative de patients atteints d’une neuropathie de Charcot-Marie-Tooth de type 1A", 17es Journées de la Société Française de Myologie (JSFM), Nov 2019, Marseille, France

[31] A. C. Ogier, S. Rapacchi, A. Le Troter, M.-E. Bellemare, "Suivi dynamique 3D des organes pelviens – résultats préliminaires", GRETSI, Aug 2019, Lille, France

[32] A. C. Ogier, L. Heskamp, A. Fouré, A. Le Troter, A. Heerschap, D. Bendahan, "Méthode de segmentation dédiée au suivi de l'infiltration en graisse des muscles individuels des patients atteints de maladies neuromusculaires", 16es Journées de la Société Française de Myologie (JSFM), Nov 2018, Brest, France

[33] A. C. Ogier, A. Fouré, M. Sdika, A. Le Troter, D. Bendahan, "Segmentation d’images IRM à 7T des muscles individuels basée sur des approches de propagation de masques", 15es Journées de la Société Française de Myologie (JSFM), Nov 2017, Colmar, France

[34] A. Fouré, P. Besson, A. Le Troter, A. Ogier, C. Vilmen, J. Gondin, M. Guye, D. Bendahan, "Caractérisation de la microarchitecture des muscles de la jambe par IRM à très haut champ (7T) : Etude de faisabilité et perspectives pour une évaluation précise et non invasive de l'architecture musculaire en 3D", Société Française de Résonance Magnétique en Biologie et Médecine (SFRMBM), Bordeaux, France, March 2017.

[35] A. C. Ogier, M. Sdika, A. Fouré, A. Le Troter, D. Bendahan, "Segmentation des muscles individuels en IRM basée sur des approches de recalage non-linéaire", 3ème Congrès de la Société Française de Résonance Magnétique en Biologie et Médecine (SFRMBM), Mar 2017, Bordeaux, France