MAXIME CHAMBERLAND

677 12e Ave. Nord #1218-B

Sherbrooke J1E4L8

Tel: (819) 821-8000 x75701, Cell: (819) 993-3518

maxime.chamberland@usherbrooke.ca

chamberm.github.io

Languages: French, English

Studies

Université de Sherbrooke — Sherbrooke
Ph.D candidate Radition sciences & Biomedical Imaging — *2013-...*
- Research topic: Diffusion and functional MRI visualization & neurosurgical applications
- Supervisors: Maxime Descoteaux (Ph.D), Kevin Whittingstall (Ph.D), David Fortin (M.D)

Université de Sherbrooke — Sherbrooke
M.Sc Computer Science - Medical imaging — *2011-2013*
- Research topic: Real-time fiber tractography
- Supervisor: Maxime Descoteaux (Ph.D)

Université de Sherbrooke — Sherbrooke
B.Sc Digital Imaging Science including 4 internships — *2007-2010*

Work Experience

CHUS — Sherbrooke
Neurosurgery assistant (pre-, intra- and post- operative data analysis). — *2011-...*

Université de Sherbrooke — Sherbrooke
Teaching fellow - Visual and digital interactions (IMN638) — *2011-2014*

Borealis www.boreal-is.com — Magog
R&D developer — *2010*

Canadian Space Agency www.asc-csa.gc.ca — St-Hubert
Web developer — *2008-2009*

Reviewing expertise

PLoS One, Medical Image Analysis, MICCAI 2015

International presentations

2016 Invited speaker, Image Sciences Institute, Prof: Alexander Leemans, PROVIDIlab, UMC Utrecht, Netherlands.

2015 Invited speaker, CRL - Boston Children's Hospital (Harvard Medical School), Prof: Simon Warfield, Boston, USA.

2015 Invited speaker, Center for Brain Imaging, Prof: Fernando Boada, NYU, New York, USA.

2015 Invited speaker, Department of Mathematics and Computer Science, Prof: Luc Florack, TUe, Eindhoven, Netherlands.

2014 Invited speaker, Sophia-Antipolis (INRIA), Prof: Rachid Deriche, Nice, France.

2014 Neurotechnix conference, Oral presentation (Best student paper award), Rome, Italy.

2013 Sherbrooke/Boston meeting, Laboratory of Mathematics in Imaging (Harvard Medical School), Prof: C-F Westin, Boston, USA.

2013 Sherbrooke/Boston meeting, CRL - Boston Children's Hospital (Harvard Medical School), Prof: Simon Warfield, Boston, USA.

Visiting PhD student

2015 Boston Children's Hospital, Harvard Medical school, Computational Radiology Lab. Topic: Surgical application of interactive tractography. Supervisors: Simon Warfield, Benoit Scherrer, 6 months.

2015 UMC - Utrecht (The Netherlands). Topic: Real-time orientation-dependent opacity rendering of fiber tractography. Supervisor: Alexander Leemans (PROVIDILab), 2 months.

Scholarships, awards and prizes

2016 ISMRM Educational stipend, Singapore (475$)

2015 UdeS Publication award: Sherbrooke Neuroscience Center (500$)

2015 CRSNG Michael Smith Foreign Study Supplements Program (6000$)

2015 QBIN Travel award: Quebec Bio-Imaging Network (500$)

2015 UdeS Publication award: Sherbrooke Neuroscience Center (500$)

2015 UdeS Travel award: Sherbrooke Neuroscience Center (500$)

2015 ISMRM Educational stipend, Toronto, Canada. (460$).

2014 UdeS People's choice, 6th Sherbrooke Neuroscience Center day (500$)

2014 Neurotechnix Best student paper award: Rome, Italy.

2014 QBIN Travel award: Quebec Bio-Imaging Network (500$)

2014 CRSNG Ph.D scholarship: Alexander-Graham-Bell BESC-D (105 000$ for 3 years).

2014 FQRNT Ph.D scholarship: FQRNT (40 000$ for 2 years, kindly declined).

2013 UdeS Ph.D scholarship: FMSS (57 000$ for 3 years, kindly declined).

2013 UdeS Best student poster: CIMS (300$)

2013 ACFAS Best picture: Eurêka festival (1500$)

2013 UdeS Best picture: Research day (250$)

2013 NSF Science visualisation challenge: People's choice and mention from jury.

2012 UdeS Student work recognition: Travel award (750$)

2012 UdeS Travel award: Sherbrooke Neuroscience Center (500$)

2012 Neuro-bureau Brain-Art Competition: Winner of Educational Gallery.

Computer science expertise

Languages: C/C++, Python, OpenGL, GLSL, CUDA, ITK/VTK, Java, HTML, CSS, LaTeX, SPARC

IDE tools: Microsoft Visual Studio, Eclispe, CMake, Git, SVN

Softwares: Fibernavigator, Dipy, MRtrix, Slicer, MITK, FSL, ExploreDTI, Brainvisa/Anatomist, AFNI, MisterI, Matlab, Maple, Scilab, Camtasia, Unity3D (Game engine)

OS: Windows, Linux(Ubuntu, Mint)

Projects

Fibernavigator (Programmer): Tool for visualization of dMRI and fMRI data. C++, OpenGL, GLSL.
github.com/chamberm/fibernavigator/

Publications

Journals

- C.M.W. Tax, M. Chamberland, M. van Stralen, M.A. Viergever, K. Whittingstall, D. Fortin, M. Descoteaux, A. Leemans, Seeing more by showing less: Orientation-dependent transparency rendering for fiber tractography visualization, *PLoS One* 2015.
- **Chamberland M.**, Bernier M., Fortin D., Whittingstall K., Descoteaux M., 3D interactive tractography-informed resting-state fMRI connectivity, *Frontiers in Neuroscience* 2015.
- **Chamberland M.***, Bernier M.*, Houde JC., Descoteaux M., Whittingstall K., Using fMRI non-local means denoising to uncover activation in sub-cortical structures at 1.5 T for guided HARDI tractography, *Frontiers in Human Neuroscience* 2014.
- **Chamberland M.**, Fortin D., Mathieu D., Descoteaux M., Real-time HARDI tractography for instantaneous structural connectivity display, *Frontiers in Neuroinformatics* 2014.
- Coupé P., Manjon J., Chamberland M., Descoteaux M., Hiba B. Collaborative Patch-Based Super-Resolution for Diffusion-Weighted Images, *NeuroImage* 2013.

Conference proceedings

- Girard G., Chamberland M., Houde J-C, Fortin D., Descoteaux M. Neurosurgical tracking at the Sherbrooke Connectivity Imaging Lab (SCIL), *MICCAI DTI-Challenge*, July 2012.

Book chapters

- Vaillancourt O., Chamberland M., Houde J-C., Descoteaux M., Visualization of Diffusion Propagator and Multiple Parameter Diffusion Signal, *Visualization and Processing of Tensors and Higher Order Descriptors for Multi-Valued Data*, Springer, 2015

Abstracts

- **Chamberland M.**, Girard G., Bernier M., Fortin D., Descoteaux M., Whittingstall K. Reduced structural and functional inter-subject variability in the visuo-motor system *Proceedings of OHBM 2015*, Geneva, Switzerland, 2016.
- **Chamberland M.**, Scherrer B., Prabhu S., Madsen J., Whittingstall K., Fortin D., Descoteaux M., Warfield S.K. Magnetic ROIs enable improved tractography accuracy through oriented prior, *ISMRM*, Singapore 2016.
- **Chamberland M.**, Girard G., Bernier M., Fortin D., Descoteaux M., Whittingstall K. Association between structural and functional inter-subject variability of the motor and visual networks, *ISMRM*, Singapore 2016.
- **Chamberland M.**, Bernier M., Fortin D., Descoteaux M., Whittingstall K. Tractography-driven resting-state fMRI for investigating inter-subject variability, *Proceedings of OHBM 2015*, Honolulu, Hawaii, 2015.
- **Chamberland M.**, Bernier M., Fortin D., Whittingstall K., Descoteaux M. Interactively computing and visualizing functional and structural brain connectivity in real-time, *ISMRM*, Toronto 2015.
- Bernier M., Chamberland M., Cunnane S., Whittingstall K., Subcortical structures in resting state fMRI: uncovering functional networks involving deep-brain structures using non-local means denoising at 1.5T, *ISMRM*, Toronto 2015.

- **Chamberland M.**, Descoteaux M., Whittingstall K., Fortin D. Simultaneously probing functional and structural brain connectivity in real-time: Fibernavigator: An interactive tool for brain visualization, *Neurotechnix*, Rome, Italy 2014.
- **Chamberland M.**, Bernier M., Fortin D., Descoteaux M., Whittingstall K. Uncovering a visuospatial network at rest, *Proceedings of OHBM 2014*, Hamburg, Germany, 2014.
- **Chamberland M.**, and Descoteaux M. Explore the brain white matter networks in real-time: Multi-sticks fiber tracking, *Proceeding of: International Society of Magnetic Resonance in Medicine (ISMRM)*. Salt Lake City, U.S, 2013.
- **Chamberland M.**, Fortin D., Descoteaux M. Real-Time Fiber Tractography: Interactive Parameter Tuning for Neurosurgical Interventions, In *Proceedings of OHBM 2012*, Beijing, China, June 2012.

Thesis

- **Chamberland M.**, Visualisation en imagerie par résonance magnétique de diffusion: Tractographie en temps réel des fibres de la matière blanche du cerveau, M.Sc. thesis, 2013.

Interests

Scientific visualisation, Medical imaging, Snowboard, Hockey.