MAXIME CHAMBERLAND
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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

Invited international presentations

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

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

2014 Neurotechnix conference, Oral presentation, Rome, Italy.

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

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

Internships

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

Important Awards and Honors

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 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) - Declined.

2013 UdeS Ph.D scholarship: FMSS (57 000$ for 3 years) - 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 skills

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

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

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

OS: Windows, Linux(Ubuntu, Mint)

Projects

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

Publications

Journals

- **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.**, 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.