Jon Pipitone

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Education

- **MD Candidate (2016-2020), Queen's University School of Medicine**
- **MSc. Computer Science (2007-2010), University of Toronto**
  Thesis: "On software quality in climate modelling"
- **Hon BSc. Computer Science (2000-2004), University of Toronto**

Skills

- **Science**: Image processing, Diffusion tensor modelling, Machine learning, Artificial neural network models, High performance computing, Biomarker development, Qualitative research methods, Software quality analysis.
- **Systems**: Linux administration (Debian, Centos), Windows, Virtualization (ESXi, KVM, Docker, KVM), Provisioning (Ansible, Salt), Filesystems (ZFS, ext, NFS), Clustering (SGE, PBS)
- **Programming**: Python, R, Java, Matlab, Shell, Javascript, HTML/CSS, C/C++, Perl, Visual Basic, Eclipse, XML, SVG, XSLT, Git, SVN, MySQL, SQLite, LaTeX, Jekyll
- **Neuroimaging**: FSL, MINC tools, Slicer, ANTS, FreeSurfer, UKFTractography

Work

- **Research Methods Specialist**, 2012-2016
  Kimel Lab, Centre for Addiction and Mental Health, Toronto

  Research in automated MR image segmentation of the hippocampus, machine learning approaches to understanding hippocampus shape changes in Alzheimer's disease, classification of deficit/non-deficit schizophrenia from DTI white matter measures, white matter tractography. Collaborate with members of the lab and other CAMH researchers on analysis approaches and implementation. Ran formal and informal workshops and teachings for lab and CAMH researchers. Study data curation and automated preprocessing and quality control. Workstation and cluster administration.

- **Research Intern**, 2011-2012
  Kimel Lab, Centre for Addiction and Mental Health, Toronto

  Supervised by Dr. Mallar Chakravarty in the Translational Imaging-Genetics Research lab. Primary research on automated MR image segmentation techniques for the hippocampus and subfields. Other activites include assisting with the management of desktop and servers, compute cluster, data backup, software quarantine.

- **Course Developer**, 2012
  Mozilla, Toronto

  Developed course materials for the Python lessons of the Software Carpentry project (http://software-carpentry.org), as well as website and server infrastructure.

- **Software Developer**, 2005-2007
  The Jonah Group, Toronto

  Worked as part of a team to develop a datawarehouse to allow efficient claims reporting by Blue Cross of Michigan. Activities included designing Extract-Transform-Load SQL jobs to perform daily updates

to the datawarehouse, database tuning and query optimization, as well as building a JUnit-based database testing framework.

- **Software Developer**, 2004-2005
  Fidalia Networks, Mississauga

  Designed, developed and tested SimplyAssist, a zero-configuration remote assistance suite using REALBasic, C++, XML, and Python. Other responsibilies included managing company routing and networking systems, and wireless broadband radio links to remote sites.

- **Software Developer**, 2003-2004
  The Blueprint Initiative, Toronto

  Developed a web application for curating and investigating biomolecular interactions derived from automated literature search and manual curation. Implemented a text-index of structured data using Lucine, an interactive HTML display of database records using an XSL pipeline, and unit tests using JUnit.

- **NSERC Summer Internship**, 2002 *University of Victoria, Computer Science Deptartment, BC*

  Supervised by Dr. Hausi Müller in the ACRE (Adoption-Centric Reverse research group). Developed and tested the feasibility of using, an auto-generated interactive graph (node/edge) editor for software artifact diagrams using SVG, Javascript, and Perl.

Teaching

- **QMED Computes**, 09/2017-05/2018, *Course design and instruction* Research computing skills course for Queen's medical students.
- **Scientific Computing Fundamentals for CAMH Researchers workshop series**
  - November 2015, CAMH. http://camh-scwg.github.io/lrn2compute
  - August 2015, CAMH. http://pipitone.github.io/camh-computing-skills-august-2015
  - March 2015, CAMH. http://pipitone.github.io/computing-skills
- **Climate Change: Software, Science, and Society (PMU199)**. 01/2011-05/2011, *Teaching Assistant*
- **Software Carpentry (Python)**, 01/2011-05/2011, *Head Teaching Assistant*
- **Software Carpentry (Python)**, 09/2010-12/2010, *Head Teaching Assistant*
- **Software Carpentry**, 05/2010-07/2010, *Course design*
- **Software Carpentry (MATLAB)**, 01/2010-05/2010, *Instructor*
- **Software Carpentry (MATLAB/Python)**, 09/2009-12/2009, *Teaching Assistant*
- **Introduction to Computer Science (CSCA48)**, 05/2009-08/2009, *Teaching Assistant*
- **Software Design (CSC207)**, 01/2009-05/2009. *Teaching Assistant*
- **Introduction to Computer Programming (CSC148)**, 01/2008-05/2008. *Teaching Assistant*
- **Introduction to Computer Programming (CSC108)**, 09/2007-12/2007. *Teaching Assistant*

Volunteer Work

- **QMED BAMS**, 09/2018-Present, *Facilitator*
- **QMED SpeakEasy**, 05/2018, Class event to foster dialog on difficult topics. *Organiser/Facilitator*
- **QMED Mindfulness**, 09/2016-05/2018, Daily mindfulness co-learning group. *Coordinator/Instructor*

- **Pre-clerkship Clinical Skills**, 2017-2018. Weekly pre-clerk clinical skills teaching sessions. *Instructor*
- **QMED Class Professionalism Rep**, 01/2017-Present. Elected. Advocate on behalf of student professionalism concerns.
- **Circles Kingston**, 07/2018-09/2018, Poverty-to-self-sufficiency networking group by Loving Spoonful. *Kitchen helper*
- **Software Carpentry**, 2007-2017, Computing skills workshops for scientists. *Instructor/sysadmin*
- **CAMH Schizophrenia Volleyball Program**, 2012-2016. Weekly client-staff volleyball. *Coordinator and supervisor.*

- **Hot Yam!**, *2007-2011.* Student-run campus kitchen @ U of Toronto, *Coordinator*
- **Toronto Sustainable Food Co-operative**, 2011. Campus restaurant cooperative @ U of Toronto. *Founder*
- **Canadian Civil Liberties Association**, 2010. G20 Observer

Publications

Peer-Reviewed Publications

- Bhagwat, Nikhil, Jon **Pipitone**, Aristotle N. Voineskos, and M. Mallar Chakravarty. "An Artificial Neural Network Model for Clinical Score Prediction in Alzheimer Disease Using Structural Neuroimaging Measures." Journal of Psychiatry and Neuroscience 44, no. 4 (July 1, 2019): 246–50. https://doi.org/10.1503/jpn.180016.

- Amaral, Robert S.C., Min Tae M. Park, Gabriel A. Devenyi, Vivian Lynn, Jon **Pipitone**, Julie Winterburn, Sofia Chavez, et al. "Manual Segmentation of the Fornix, Fimbria, and Alveus on High-Resolution 3T MRI: Application via Fully-Automated Mapping of the Human Memory Circuit White and Grey Matter in Healthy and Pathological Aging." NeuroImage 170 (2018): 132–50. https://doi.org/10.1016/j.neuroimage.2016.10.027.

- Donelle, Jessy, Jacalyn Duffin, Jonathan **Pipitone**, and Brian White-Guay. "Assessing Canada's Drug Shortage Problem." CD Howe Institute Commentary 515, 2018. https://doi.org/10.2139/ssrn.3192558.

- Nazeri, Arash, Benoit H. Mulsant, Tarek K. Rajji, Melissa L. Levesque, Jon **Pipitone**, Laura Stefanik, Saba Shahab, et al. "Gray Matter Neuritic Microstructure Deficits in Schizophrenia and Bipolar Disorder." Biological Psychiatry 82, no. 10 (November 2017): 726–36. https://doi.org/10.1016/j.biopsych.2016.12.005.

- Bhagwat, Nikhil, Jon **Pipitone**, Julie L. Winterburn, Ting Guo, Emma G. Duerden, Aristotle N. Voineskos, Martin Lepage, Steven P. Miller, Jens C. Pruessner, and Mallar Mallar Chakravarty. "Manual-Protocol Inspired Technique for Improving Automated MR Image Segmentation during Label Fusion." Frontiers in Neuroscience 10, no. JUL (July 19, 2016). https://doi.org/10.3389/fnins.2016.00325.

- Plitman, Eric, Raihaan Patel, Jun Ku Chung, Jon **Pipitone**, Sofia Chavez, Francisco Reyes-Madrigal, Gladys Gómez-Cruz, et al. "Glutamatergic Metabolites, Volume and Cortical Thickness in Antipsychotic-Naive Patients with First-Episode Psychosis: Implications for Excitotoxicity." Neuropsychopharmacology 41, no. 10 (September 8, 2016): 2606–13. https://doi.org/10.1038/npp.2016.84.

- Ameis, Stephanie H., Jason P. Lerch, Margot J. Taylor, Wayne Lee, Joseph D. Viviano, Jon **Pipitone**, Arash Nazeri, et al. "A Diffusion Tensor Imaging Study in Children With ADHD, Autism Spectrum Disorder, OCD, and Matched Controls: Distinct and Non-Distinct White Matter Disruption and Dimensional Brain-Behavior Relationships." American Journal of Psychiatry 173, no. 12 (December 2016): 1213–22. https://doi.org/10.1176/appi.ajp.2016.15111435.

- Barnett, Alexander J, Min Tae M Park, Jon **Pipitone**, M Mallar Chakravarty, and Mary Pat McAndrews. "Functional and Structural Correlates of Memory in Patients with Mesial Temporal Lobe Epilepsy." Frontiers in Neurology 6 (May 13, 2015): 103. https://doi.org/10.3389/fneur.2015.00103.

- Nieman, Brian J., A. Elizabeth de Guzman, Lisa M. Gazdzinski, Jason P. Lerch, M. Mallar Chakravarty, Jon **Pipitone**, Douglas Strother, et al. "White and Gray Matter Abnormalities After Cranial Radiation in Children and Mice." International Journal of Radiation Oncology*Biology*Physics 93, no. 4 (November 2015): 882–91. https://doi.org/10.1016/j.ijrobp.2015.07.2293.
- Voineskos, Aristotle N., Julie L. Winterburn, Daniel Felsky, Jon **Pipitone**, Tarek K. Rajji, Benoit H. Mulsant, and M. Mallar Chakravarty. "Hippocampal (Subfield) Volume and Shape in Relation to Cognitive Performance across the Adult Lifespan." Human Brain Mapping 36, no. 8 (August 2015): 3020–37. https://doi.org/10.1002/hbm.22825.
- Guo, Ting, Julie L. Winterburn, Jon **Pipitone**, Emma G. Duerden, Min Tae M. Park, Vann Chau, Kenneth J. Poskitt, et al. "Automatic Segmentation of the Hippocampus for Preterm Neonates from Early-in-Life to Term-Equivalent Age." NeuroImage: Clinical 9 (2015): 176–93. https://doi.org/10.1016/j.nicl.2015.07.019.
- Wong, Angelita Pui-Yee, Jon **Pipitone**, Min Tae M. Park, Erin W. Dickie, Gabriel Leonard, Michel Perron, Bruce G. Pike, et al. "Estimating Volumes of the Pituitary Gland from T1-Weighted Magnetic-Resonance Images: Effects of Age, Puberty, Testosterone, and Estradiol." NeuroImage 94 (July 2014): 216–21. https://doi.org/10.1016/j.neuroimage.2014.02.030.
- Wheeler, A. L., M. M. Chakravarty, J. P. Lerch, Jon **Pipitone**, Z. J. Daskalakis, T. K. Rajji, B. H. Mulsant, and A. N. Voineskos. "Disrupted Prefrontal Interhemispheric Structural Coupling in Schizophrenia Related to Working Memory Performance." Schizophrenia Bulletin 40, no. 4 (July 1, 2014): 914–24. https://doi.org/10.1093/schbul/sbt100.
- Park, Min Tae M, Jon **Pipitone**, Lawrence H. Baer, Julie L. Winterburn, Yashvi Shah, Sofia Chavez, Mark M. Schira, et al. "Derivation of High-Resolution MRI Atlases of the Human Cerebellum at 3T and Segmentation Using Multiple Automatically Generated Templates." NeuroImage 95 (July 15, 2014): 217–31. https://doi.org/10.1016/j.neuroimage.2014.03.037.
- Friedel, Miriam, Matthijs C. van Eede, Jon **Pipitone**, M. Mallar Chakravarty, and Jason P. Lerch. "Pydpiper: A Flexible Toolkit for Constructing Novel Registration Pipelines." Frontiers in Neuroinformatics 8 (July 30, 2014). https://doi.org/10.3389/fninf.2014.00067.
- Felsky, D, P Szeszko, L Yu, W G Honer, P L De Jager, J A Schneider, A K Malhotra, et al. "The SORL1 Gene and Convergent Neural Risk for Alzheimer's Disease across the Human Lifespan." Molecular Psychiatry 19, no. 10 (October 29, 2014): 1125–32. https://doi.org/10.1038/mp.2013.142.
- **Pipitone**, Jon, Min Tae M Park, Julie Winterburn, Tristram A. Lett, Jason P. Lerch, Jens C. Pruessner, Martin Lepage, Aristotle N. Voineskos, and M. Mallar Chakravarty. "Multi-Atlas Segmentation of the Whole Hippocampus and Subfields Using Multiple Automatically Generated Templates." NeuroImage 101 (November 1, 2014): 494–512. https://doi.org/10.1016/j.neuroimage.2014.04.054.
- Raznahan, Armin, Phillip W Shaw, Jason P Lerch, Liv S Clasen, Deanna Greenstein, Rebecca Berman, Jon **Pipitone**, Mallar M Chakravarty, and Jay N Giedd. "Longitudinal Four-Dimensional Mapping of Subcortical Anatomy in Human Development." Proceedings of the National Academy of Sciences 111, no. 4 (January 28, 2014): 1592–97. https://doi.org/10.1073/pnas.1316911111.
- **Pipitone**, J., and S. Easterbrook. "Assessing Climate Model Software Quality: A Defect Density Analysis of Three Models." Geoscientific Model Development 5, no. 4 (August 9, 2012): 1009–22. https://doi.org/10.5194/gmd-5-1009-2012.

Published Abstracts / Posters

- Riggs, L., Bouffet, E., Chakravarty, M., Laughlin, S., Laperriere, N., Liu, F., Skocic, J., **Pipitone, J.**, Strother, D., Hukin, J., Fryer, C., McConnell, D., and Mabbott, D. (2014). Hippocampal volumes decrease over time in children treated for medulloblastoma. Neuro-Oncology, volume 16, page 103.
- Felsky, D., Szeszko, P., Yu, L., Honer, W. G., De Jager, P. L., Schneider, J. A., Malhotra, A. K., Lencz, T., Ikuta, T., **Pipitone, J.**, Chakravarty, M. M., Lobaugh, N. J., Mulsant, B. H., Pollock,

B.G., Kennedy, J. L., Bennett, B. A., and Voineskos, A. N. (2013). Effects of the SORL1 alzheimer's disease risk gene across the human lifespan. Alzheimer's & Dementia: The Journal of the Alzheimer's Association, 4(9).

- Lett, T. A., Chakravarty, M. M., Lerch, J. P., Felsky, D., **Pipitone, J.**, Daskalakis, J., Mulsant, B. H., Kennedy, J. L., and Voineskos, A. N. (2012). The schizophrenia risk gene GAD1 (GAD67) promoter variants and Fronto-Limbic system disconnectivity. Biological Psychiatry, volume 71, page 153S.
- **Pipitone, J.**, Lett, T. A. P., Roostaei, T., Lerch, J. P., Mulsant, B. H., Kennedy, J. L., Chakravarty, M. M., and Voineskos, A. N. (2012). The link between neurexin-1 and local cortical folding and surface area. Biological Psychiatry, volume 71, page 252S.
- Easterbrook, S., Glenn, M., Aranda, J., and **Pipitone, J.** (2009). Software research and climate change. In Proceedings of the 2009 Conference of the Center for Advanced Studies on Collaborative Research, pages 362–363. IBM Corp.
- **Pipitone, J.** and Easterbrook, S. (2009). On the software quality of climate models. AGU Fall Meeting Abstracts, 1:0759.
- **Pipitone, J.**, Aranda, J., and Cortés, V. Aim for the eagle: Making the best use of our software research skills to fight climate change. In proceedings of the 2010 Second International Workshop on Software Research and Climate Change.

Courses

University of Toronto: - Topics in computer science (CSC2600), Winter 2011. - Building community resilience (CHL7001), Fall 2010 - Topics in software engineering (CSC2125), Winter 2007 - Natural language computing (CSC2511), Winter 2007 - Algorithms in Graph Theory (CSC2410), Fall 2007 - Computational structural biology (CSC2418), Fall 2007 - Introduction to machine learning (CSC2515), Fall 2007 - Cognitive Neuroscience (PSY493H1), Fall 2011. Audited - Physiology and Psychology of Emotion (PSY494), Fall 2011. Audited. - Buddhism and the Science of Mindfulness Meditation (NEW331), Summer 2011. Audited. - Buddhism and Cognitive Science (NEW333), Summer 2011. Audited. - Environmental Psychology (PSY435), Fall 2010, Audited.

Available at: http://github.com/pipitone/cv
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