**Academic Curriculum Vitae**

SECTION A: APPLICANT INFORMATION

* IT or OMSAS Number: IT1629480
* Last Name: Pipitone
* First Name: Jon
* Email Address: jon@pipitone.ca
* Application for (please check all applicable streams):

\_\_\_ MD/PhD program applicant stream

\_X\_ MD Graduate applicant stream

SECTION B: University Educational Background

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* + **MSc. Computer Science (2007-2010), University of Toronto**
  + **Hon BSc. Computer Science (2000-2004), University of Toronto**

SECTION D: Other Honours, Scholarships and Awards during University

* Fellowship Award, University of Toronto, 2007-2011
* Graduate Admission Award, Arts and Science, University of Toronto, 2007-2008
* Dean’s List Scholar, University of Toronto, 2001 - 2004
* NSERC Undergraduate Student Research Award, University of Victoria, 2002
* Dean’s Honour List, McMaster University, 2000
* The Chancellor’s Scholarship, McMaster University, 1999
* Marauder Scholar, McMaster University, 1999
* Science Incentive Award, McMaster University, 1999

SECTION E: Research Experience (list with brief description)

Research Methods Specialist, 2013-Present  
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. Run formal and informal workshops and teachings for lab and CAMH researchers. Study data curation and automated preprocessing and quality control.

Research practicum, 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.

**PhD Computer Science,** 2010-2012 (withdrawn)

*Software Engineering Group, University of Toronto*

Supervised by Dr. Steve Easterbrook. Studied community resilience, and pathways for computer science research to be applied to environmental issues (viz participatory action research).

**MSc. Computer Science,** *2007-2010*

*Software Engineering Group, University of Toronto*

Supervised by Dr. Steve Easterbrook. Studied scientific software development in the context of software quality of four major climate models, as well as the communication, collaboration, and troubleshooting approaches of scientists.

NSERC Summer Internship, 2002

University of Victoria, Computer Science Deptartment, BC

Supervised by Dr. Hausi Müller in the Adoption-Centric Software Engineering 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.

SECTION F: Publications, Presentations and Abstracts (list with brief description)

**Peer-reviewed Publications**

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Ameis, S. H., Lerch, J. P., Taylor, M., Lee, W., Viviano, J., **Pipitone, J.**, Nazeri, A., Croarkin, P., Voineskos, A. N., Crosbie, J., Brian, J., Soreni, N., Schachar, R., Szatmari, P., Arnold, P., and Anagnostou, E., (2015). Common and Distinct White Matter Markers in Children with Attention-Deficit/Hyperactivity Disorder, Obsessive Compulsive Disorder and Autism Spectrum Disorder. *(Manuscript in preparation)*

*An investigation of differences in core whitematter tract integrity as determined using diffusion tensor MR imaging in children with ADHD, OCD and ASD. I assissted in preparing the DTI data for analysis.*

Plitman, E., Chakravarty, M.M., Chung, J. K., Patel, R., **Pipitone**, J., Chaveza, S., Reyes-Madrigal, F., Gómez-Cruz, G., León-Ortiz, P., de la Fuente-Sandoval, C., Graff-Guerrero, A. (2015). Glutamate+glutamine (Glx) levels in the associative striatum are related to local volume deficits in antipsychotic-naïve patients with first-episode psychosis: a proton magnetic resonance spectroscopy study with implications for excitotoxicity. *(Manuscript in preparation)*

*A combined analysis of brain volumetry and MR Spectroscopy-based study of glutamate/glutamine levels*. *I assissted in the brain volumetry (using MAGeT Brain, see below) and data preparation.*

Guo, T., Winterburn, J. L., **Pipitone, J.**, Duerden, E.G., Park, M.M., Chau, V., Poskitt, K. J, Grunau, R. E., Synnes, A., Miller, S. P., Chakravarty, M. M., Automatic segmentation of the hippocampus for preterm neonates from early-in-life to term-equivalent age, NeuroImage: Clinical, ISSN 2213-1582. <http://dx.doi.org/10.1016/j.nicl.2015.07.019>.

*A brain volumetry study of the hippocampus in MR images of preterm babies. I assisted with hippocampal volumetry (using MAGeT Brain, see below).*

Voineskos AN, Winterburn JL, Felsky D, **Pipitone J**, Rajji TK, Mulsant BH, Chakravarty MM. (2015). Hippocampal (subfield) volume and shape in relation to cognitive performance across the adult lifespan. Human Brain Mapping.

*Explored changes in hippocampal shape through aging by looking at principle components of shape differences relative to a model brain. I assisted in hippocampal segmentation, model construction, and computational implementation.*

Barnett, A. J., Park, M. T., **Pipitone, J.**, Chakravarty, M. M., and McAndrews, M. P. (2015). Functional and structural correlates of memory in patients with mesial temporal lobe epilepsy. Frontiers in Neurology, 6.

Friedel, M., van Eede, M. C., **Pipitone, J.**, Chakravarty, M. M., and Lerch, J. P. (2014). Pydpiper: a flexible toolkit for constructing novel registration pipelines. Frontiers in neuroinformatics, 8.

*A framework for writing software to run arbitary sequences of commands (so-called “pipelines”) and execute those commands on a High Performance Computing cluster. I was involved in the design, implementation and testing of this framework.*

Park, M. T., **Pipitone, J.**, Baer, L. H., Winterburn, J. L., Shah, Y., Chavez, S., Schira, M. M., Lobaugh, N. J., Lerch, J. P., Voineskos, A. N., and Chakravarty, M. M. (2014). Derivation of high-resolution MRI atlases of the human cerebellum at 3T and segmentation using multiple automatically generated templates. Neuroimage, 95:217–231.

*A protocol for manually delineating the cerebellum and subdivisions, as well as the publication of five high-resolution MRI images and delineations (atlases). I assisted in the design of the experiments used to validated the delineations (using MAGeT Brain, see below).*

**Pipitone, J.**, Park, M. T., Winterburn, J., Lett, T. A., Lerch, J. P., Pruessner, J. C., Lepage, M., Voineskos, A. N., Chakravarty, M. M., Alzheimer's Disease Neuroimaging Initiative (2014). Multi-atlas segmedntation of the whole hippocampus and subfields using multiple automatically generated templates. Neuroimage, 101:494–512.

*A method for automatically delineating subcortical brain structures in MR images, and in particular for delineating the hippocampus and subfields. I was responsible for the design, implementation, validation experiments and writing of the manuscript.*

Raznahan, A., Shaw, P. W., Lerch, J. P., Clasen, L. S., Greenstein, D., Berman, R., **Pipitone, J.**, Chakravarty, M. M., and Giedd, J. N. (2014). Longitudinal four-dimensional mapping of subcortical anatomy in human development. Proceedings of the National Academy of Sciences, 111(4):1592–1597.

*An analysis of the shape changes in the globus pallidus, striatum and thalamus over aging. I was responsible for analysing the shape changes and producing a video animation to illustrate these changes.*

Wong, A. P., **Pipitone, J.**, Park, M. T., Dickie, E. W., Leonard, G., Perron, M., Pike, B. G., Richer, L., Veillette, S., Chakravarty, M. M., and Others (2014). Estimating volumes of the pituitary gland from t1-weighted magnetic-resonance images: Effects of age, puberty, testosterone, and estradiol. Neuroimage, 94:216–221.

*An investigation of the difference in pituitary gland volume over age. I assisted in the automatic delineation and volumetry of the pituitary gland from MR images (using MAGeT brain, see above).*

Wheeler, A. L., Chakravarty, M. M., Lerch, J. P., **Pipitone, J.**, Daskalakis, Z. J., Rajji, T. K., Mulsant, B. H., and Voineskos, A. N. (2013). Disrupted prefrontal interhemispheric structural coupling in schizophrenia related to working memory performance. Schizophrenia bulletin.

*A brain network analysis using cortical thickness changes across subjects to derive correlated networks of regions. I assisted in the implementation and execution of the analysis.*

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). The SORL1 gene and convergent neural risk for alzheimer’s disease across the human lifespan. Molecular psychiatry.

*An investigation of the contribution of the SORL1 gene variants in predicting Alzheimer's disease symptoms. I contributed to the implementation and execution of the analysis.*

**Pipitone, J.** and Easterbrook, S. (2012). Assessing climate model software quality: a defect density analysis of three models. Geoscientific Model Development, 5(4):1009–1022.

*An investigation into of the software quality of three major climates from meterological centres in the US and UK. I was responsible for designing the study, conducting the analysis, and writing up the resulting manuscript (this was part of my Master's thesis research).*

**Posters and Abstracts**

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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.

SECTION H: Teaching experience during university and relevant employment after university graduation (if applicable)

Scientific Computing Fundamentals for CAMH Researchers workshop series, August 2015

CAMH, Instructor

Scientific Computing Fundamentals for CAMH Researchers workshop series, March 2015, CAMH, Instructor

Climate Change: Software, Science, and Society (PMU199). 01/2011-05/2011, Teaching Assistant, University of Toronto

Software Carpentry (Python), 01/2011-05/2011, Teaching Assistant, Teaching Assistant, University of Toronto

Software Carpentry (Python), 09/2010-12/2010, Teaching Assistant, Teaching Assistant, University of Toronto

Software Carpentry, 05/2010-07/2010, Course design, University of Toronto

Software Carpentry (MATLAB), 01/2010-05/2010, Instructor, University of Toronto

Software Carpentry (MATLAB/Python), 09/2009-12/2009, Instructor, University of Toronto

Introduction to Computer Science (CSCA48), 05/2009-08/2009, Teaching Assistant, Teaching Assistant, University of Toronto

Software Design (CSC207), 01/2009-05/2009, Teaching Assistant, University of Toronto

Introduction to Computer Programming (CSC148), 01/2008-05/2008. Teaching Assistant

Introduction to Computer Programming (CSC108), 09/2007-12/2007. Teaching Assistant

SECTION I: Practicums (if applicable)

Research practicum, 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.