Bo Cao

Assistant Professor
Canada Research Chair in Computational Psychiatry (Tier 2)
Department of Psychiatry
Faculty of Medicine & Dentistry
University of Alberta
Edmonton, Alberta, Canada

cellphone: 617-652-0513
email: CloudBoCao@gmail.com

Google Scholar: https://scholar.google.ca/citations?hl=en&user=GsGWZBgAAAAJ
Web Page: https://www.ualberta.ca/medicine/about/people/bo-cao

EDUCATION

Boston University, Boston, MA

Ph.D. in Computational Neuroscience   01/2013
Training projects in machine learning, neural network modeling in vision, motion and learning, biophysical modeling of neurons

Research projects in designing and conducting psychophysical experiments, collecting and analyzing behavioral data, human fMRI data, developing models on electrophysiological data

Peking University, Beijing, China

Master of Science, Psychological Science   07/2007

Top 3 out of 595 applicants in National Standard Examination   01/2005

Bachelor of Science, Mathematical Science   07/2005

AWARDS

Canada Research Chair in Computational Psychiatry (Tier 2) (2019-2024). Role: PI.

Canada Foundation for Innovation John R. Evans Leaders Fund (2019-2021). Role: PI.

Gerald R. Klerman Honorable Mention 2019.

Mental Health Foundation 2020-2022. Role: PI.

University Hospital Foundation 2019-2020. Role: PI.

NARSAD Young Investigator Grant 2017-2019. Role: PI.

MITACS Accelerate Postdoctoral Fellowship 2019-2021. Role: Supervisor.

Alberta SynAD ADRD Small Equipment Grant 2019. Role: PI.

Alberta SynAD ADRD Trainee Grants 2020. Role: Supervisor for one postdoc and two graduate students

Alberta Innovates Summer Research Studentship Program, Undergraduate Research Initiative, University of Alberta Office of the Provost and VP (Academic) Summer Student Award. Role: Supervisor for five undergraduate students in 2019 and 2020

Alberta Machine Intelligence Institute Research Projects 2019.
Role: co-investigator. PI: Russell Greiner.

Society of Biological Psychiatry Fellowship - Early Career Investigator - Domestic 2016.

Society of Biological Psychiatry Top Posters 2016.

The University of Texas Health Science Center at Houston Postdoctoral Travel Award 2015.

JOURNAL REVIEWS

Acta Psychiatrica Scandinavica, American Journal of Psychiatry, American Journal of Alzheimer's Disease and Other Dementias, Biological Cybernetics, Biological Psychiatry, Bipolar Disorder, BMC Psychiatry, Brain Imaging and Behavior, Brain Sciences, Brazilian Journal of Psychiatry, British Journal of Psychiatry, Clinical and Experimental Pharmacology and Physiology, Cerebral Cortex, Chronic Stress, Clinical and Experimental Pharmacology and Physiology, eLife, European Neuropsychopharmacology, Frontiers in Neuroscience, Genes Brain and Behavior, Human Brain Mapping, IEEE Journal of Biomedical and Health Informatics, Journal of Affective Disorders, Journal of Biomedical and Health Informatics, Journal of Cognitive

Neuroscience, Journal of Human Nutrition and Dietetics, Journal of Neuropsychiatry and Clinical Neurosciences, Journal of Psychiatric Research, Journal of Vision, Molecular Psychiatry, Neural Network, NeuroImage, NeuroImage Clinical, PLoS ONE, PLoS Medicine, Progress in Neuropsychopharmacology & Biological Psychiatry, Psychiatric Research, Schizophrenia Bulletin, Schizophrenia Research, Translational Psychiatry, Trends in Psychiatry and Psychotherapy

TEACHING EXPERIENCE

Introduction to Clinical Neuroscience (Neuro 210) Guest Lec.	*University of Alberta*	2020
Systems Neuroscience (PHYSL-372) Guest Lec.	*University of Alberta*	2020
Introduction to Machine Learning (CMPUT 466/566) 6 talks	*University of Alberta*	2019
Biological Aspects of Psychiatry (PSYCI 511) Guest Lec.	*University of Alberta*	2019-20
Neuroimaging in Neuroscience (BME 510) Guest Lec.	*University of Alberta*	2019
AI Summer School, Lecturer	*University of Alberta*	2018
Mentor of psychiatry Ph.D. students and summer interns	*University of Texas*	2015-2016
Mentor of summer interns	*Boston University*	2011-2013
Co-host of Thayer Academy students	*Boston University*	2010-2013
Neural and Computational Models of Vision, Guest Lec.	*Boston University*	2010, 2011
Computational Neuroscience, Teaching Asst.	*Boston University*	2008

PUBLICATIONS

1. Vincent IO Agyapong, Marianne Hrabok, Wesley Vuong, April Gusnowski, Reham Shalaby, Kelly Mrklas, Daniel Li, Liana Urichuk, Mark Snaterse, Shireen Surood, **Bo Cao**, Xin-Min Li, Russ Greiner, Andrew Greenshaw (2020). Closing the psychological treatment gap during the covid-19 pandemic with a supportive text messaging program: protocol for implementation and evaluation. JMIR Research Protocols (in press).

2. Jianshan Chen, Jiuwei Tan, Andrew J Greenshaw, Jeff Sawalha, Yang Liu, Xiaofei Zhang, Wenjin Zou, Xiaofang Cheng, Wenhao Deng, Yizhi Zhang, Liqian Cui, Chuihong Liu, Jiaqi Sun, Xiongchao Cheng, Qiuxia Wu, Suyi Li, Siming Mai, Xiaofeng Lan, Yingmei Chen, Yinglian Cai, Chaodun Zheng, Daomeng Cheng, Bin Zhang, Chanjuan Yang, Xuan Li, Xinmin Li, Biyu Ye, Muhammad Yousefnezhad, Yamin Zhang, Liansheng Zhao, Jair C. Soares, Xiangyang Zhang, Tao Li, **Bo Cao**[#], Liping Cao[#] (2020). CACNB2 rs11013860 polymorphism correlates of prefrontal cortex thickness in bipolar patients with first-episode mania ([#]corresponding authors). *Journal of Affective Disorders (in press).*

3. Haitang Qiu, **Bo Cao**, Jun Cao, Lan Hu, Xinke Li, Jianmei Chen, Wo Wang, Shuang Zhang, Weidong Fang, Ming Ai, Li Kuang (2020). Resting-State Functional Connectivity of the Anterior Cingulate Cortex in Young Adults Depressed Patients with and without Suicidal Behavior. *Behavioural Brain Research (in press).*

4. Xiangyang Zhang, Mi Yang, Xiangdong Du, Wei Liao, Dachun Chen, Fengmei Fan, Meihong Xiu, Qiufang Jia, Yuping Ning, Xingbing Huang, Fengchun Wu, Jair C. Soares, **Bo Cao**, Li Wang, Huafu Chen (2019). Glucose disturbances, cognitive deficits and white matter abnormalities in first-episode drug-naïve schizophrenia. *Molecular Psychiatry*. DOI: 10.1038/s41380-019-0478-1.

5. Cuizhen Liu, **Bo Cao**, Rongjun Yu, K Sim (2019). Basal ganglia volumetric changes in psychotic spectrum disorders. *Journal of Affective Disorders,* 255, 150-157.

6. **Bo Cao**[#], Jim Reilly Major Challenges and Limitations of Big Data Analytics ([#]corresponding author). *Personalized Psychiatry*, 15-36.

7. **Bo Cao,** Raymond Y. Cho, Dachun Chen, Meihong Xiu, Jair C. Soares, Li Wang, Xiang Yang Zhang (2018). Treatment response prediction and individualized identification of first-episode drug-naïve schizophrenia using brain functional connectivity. *Molecular Psychiatry*. DOI: 10.1038/s41380-018-0106-5.

8. Chia-Chien Wu, **Bo Cao**, Veena Dali, Celia Gagliardi, Olivier J Barthelemy, Robert D Salazar, Marc Pomplun, Alice Cronin-Golomb, Arash Yazdanbakhsh (2018). Eye movement control during visual pursuit in Parkinson's disease. *PeerJ*, 6, e5442.

9. Hanjing Emily Wu, Tomas Melicher, **Bo Cao**, Marsal Sanches, Jeffrey A. Stanley, Giovana Zunta-Soares, Benson Mwangi Jair C. Soares (2018). MR spectroscopy findings of the basal ganglia in bipolar disorders: a systematic review. *Current Psychiatry Reviews*, Vol. 14, 2, 2018, pp. 99-104(6).

10. Jonika Tannous, Henrique Amaral-Silva, **Bo Cao**, Mon-Ju Wu, Giovana B Zunta-Soares, Iram Kazimi, Cristian Zeni, Benson Mwangi, Jair C Soares (2018) Hippocampal subfield volumes in children and adolescents with mood disorders. *Journal of Psychiatric Research,* 101,57-62.

11. Sudhakar Selvaraj, Peter S Bloomfield, **Bo Cao**, Mattia Veronese, Federico Turkheimer, Oliver D Howes (2018). Brain TSPO imaging and gray matter volume in schizophrenia patients and in people at ultrahigh risk of psychosis: An [11C] PBR28 study. *Schizophrenia Research*, 195, 206-214.

12. **Bo Cao,** Qinghua Luo, Yixiao Fu, Lian Du, Tian Qiu, Xiangying Yang, Xiaolu Chen, Qibin Chen, Jair C Soares, Raymond Y Cho, Xiang Yang Zhang, Haitang Qiu (2018). Predicting individual responses to the electroconvulsive therapy with hippocampal subfield volumes in major depression disorder. *Scientific Reports,* Article Number: 5434 (2018). DOI:10.1038/S41598-018-23685-9.

13. Smita Saraykar, Vineeth John, **Bo Cao**, Matthew Hnatow, Catherine G. Ambrose, Nahid Rianon (2018). Association of selective serotonin reuptake inhibitors and bone mineral density in elderly. *Journal of Clinical Densitometry,* 21 (2), 193-199.

14. Luca Lavagnino, Benson Irungu, **Bo Cao**, Shott Megan, Jair C Soares, Frank Guido (2018). Cortical thickness patterns as state biomarker of anorexia nervosa. *International Journal of Eating Disorders,* 51 (3), 241-249.

15. Sudhakar Selvaraj, Christopher P Walker, **Bo Cao**, Peter S Bloomfield, Mattia Veronese, Federico Turkheimer, Oliver D Howes (2017). Effect of citalopram on emotion processing in humans: a combined 5-HT1A [11c]CUMI-101 PET and functional MRI study. *Neuropsychopharmacology*, 43 (3), 655.

16. Rodrigo B. Mansur, Roger S. Mcintyre, **Bo Cao**, Yena Lee, Letícia Japiassú, Kun Chen, Rui Lu, Weicong Lu, Xiaodong Chen, Ting Li, Guiyun Xu, Kangguang Lin (2017). Obesity and frontal-striatal brain structures in offspring of individuals with bipolar disorder: results from the global mood and brain science initiative. *Bipolar Disorders,* 20 (1), 42-48.

17. Rodrigo B Mansur, E Brietzke, Roger S Mcintyre, **Bo Cao**, Yena Lee, Letícia Japiassú, Kun Chen, Rui Lu, Weicong Lu, Ting Li, Guiyun Xu, Kangguang Lin (2017). BDNF and BMI effects on brain structures of bipolar offspring: results from the global mood and brain science initiative. *Acta Psychiatrica Scandinavica,* 136 (6), 607-614.

18. Mon-Ju Wu, Benson Mwangi, Ives Cavalcante Passos, Isabelle E. Bauer, **Bo Cao**, Thomas W. Frazier, Giovana B. Zunta-Soares, Jair C. Soares (2017). Prediction of vulnerability to bipolar disorder using multivariate neurocognitive patterns: a pilot study. *International Journal of Bipolar Disorders,* 5 (1), 32.

19. Valentina Baglivo*, **Bo Cao***, Benson Mwangi, Jair C. Soares, Paolo Brambilla (2017). Hippocampal subfield volumes in schizophrenic and psychotic affective disorders with the first-episode psychosis (*co-first author). *Schizophrenia Bulletin,* 44 (3), 552-559.

20. Diego Librenza-Garcia, Bruno Jaskulski Kotzian, Jessica Yang, Benson Mwangi, **Bo Cao**, Luiza Nunes Pereira Lima, Mariane Bagatin Bermudez, Manuela Vianna Boeira, Flávio Kapczinski, Ives Cavalcante Passos (2017). The impact of machine learning techniques in bipolar disorder: a systematic review. *Neuroscience & Biobehavioral Reviews,* 80, 538-554.

21. **Bo Cao**[#], Ives Cavalcante Passos, Benson Mwangi, Henrique Tomaz Do Amaral Silva, Jonika Tannous, Mon-Ju Wu, Giovana B. Zunta-Soares, Jair C. Soares (2017). Hippocampal subfield volumes in mood disorders ([#]corresponding author). *Molecular Psychiatry,* 22, 1352-1358, DOI:10.1038/Mp.2016.262.

22. **Bo Cao**[#], Benson Mwangi, Ives Cavalcante Passos, Mon-Ju Wu, Zafer Keser, Giovana B. Zunta-Soares, Dianping Xu, Khader M. Hasan, Jair C. Soares (2017). Lifespan gyrification trajectory of human brain in healthy individuals and patients with major psychiatric disorders ([#]corresponding author). *Scientific Reports* 7, Article Number: 511, DOI:10.1038/S41598-017-00582-1.

23. **Bo Cao**[#], Ives Cavalcante Passos, Mon-Ju Wu, Giovana B. Zunta-Soares, Benson Mwangi, Jair C. Soares (2017). Brain gyrification and neuroprogression in bipolar disorder ([#]corresponding author). *Acta Psychiatrica Scandinavica,* 135 (6), 612-613.

24. ENIGMA-Major Depressive Disorder Working Group (2017). Cortical abnormalities in adults and adolescents with major depression based on brain scans from 20 cohorts worldwide in the ENIGMA major depressive disorder working group. *Molecular Psychiatry* 22 (6), 900.

25. Mirella Díaz-Santos, Samantha Mauro, **Bo Cao**, Arash Yazdanbakhsh, Sandy Neargarder, Alice Cronin-Golomb (2016). Bistable perception in normal aging: perceptual reversibility and its relation to cognition. *Aging, Neuropsychology and Cognition,* 24 (2), 115-134.

26. **Bo Cao**[#], Jeffrey A. Stanley, Ives Cavalcante Passos, Benson Mwangi, Sudhakar Selvaraj, Giovana B. Zunta-Soares, Jair C. Soares (2017). Elevated choline-containing compound levels in rapid cycling bipolar disorder ([#]corresponding author). *Neuropsychopharmacology*, 42,11, 2252-2258. DOI: 10.1038/Npp.2017.39.

27. Smita Saraykar, **Bo Cao**, Lucelia Barroso, Kelly Pereira, Laiss Bertola, Mariana Nicolau, Jessica Ferreira, Natalia Dias, Erica Vieira, Antonio Teixeira, Ana, Paula M Silva, Breno Diniz (2017). Plasma IL-17A levels in patients with late-life depression. *Revista Brasileira De Psiquiatria*, 40, 212–215. DOI:10.1590/1516-4446-2017-2299.

28. SC He, YY Zhang, JY Zhan, C Wang, XD Du, GZ Yin, **Bo Cao**, YP Ning, JC Soares, XY Zhang (2017). Burnout and cognitive impairment: associated with serum BDNF in a Chinese Han population. *Psychoneuroendocrinology* 77, 236-243.

29. Albert Fenoy, Paul Schulz, Sudhakar Selvaraj, Christina Burrows, Danielle Spiker, **Bo Cao**, Giovanna Zunta-Soares, Prashant Gajwani, Joao Luciano De Quevedo, Jair Soares (2016). Deep brain stimulation of the medial forebrain bundle: distinct responses in resistant depression. *Journal of Affective Disorders,* 203, 143-151.

30. **Bo Cao**[#], Jeffrey A. Stanley, Sudhakar Selvaraj, Benson Mwangi, Ives Cavalcante Passos, Giovana Zunta-Soares, Jair C. Soares (2016). Evidence of altered membrane phospholipid metabolism in the anterior cingulate cortex and striatum of patients with Bipolar Disorder I: a multi-voxel ^{1}H MRS Study ([#]corresponding author). *Journal of Psychiatric Research,* 81, 48-55. DOI: 10.1016/j.jpsychires.2016.06.006.

31. Luca Lavagnino, Danilo Arnone, **Bo Cao**, Jair Soares, Sudhakar Selvaraj (2016). Inhibitory control in obesity and binge eating disorder: a systematic review and meta-analysis of neurocognitive and neuroimaging studies. *Neuroscience & Biobehavioral Reviews,* 68, 714-726. DOI: 10.1016/J.Neubiorev.2016.06.041.

32. Luca Lavagnino, Benson Mwangi, Isabelle E. Bauer, **Bo Cao**, Sudhakar Selvaraj, Alan Prossin, Jair C. Soares (2016). Reduced inhibitory control mediates the relationship between cortical thickness in the right superior frontal gyrus and body mass index. *Neuropsychopharmacology*, 41, 9, 2275-82. DOI: 10.1038/Npp.2016.26.

33. Bi-Yu Ye, Ze-Yu Jiang, Xuan Li, **Bo Cao**, Li-Ping Cao, Yin-Lin, Guo-Dong Miao, Gui-Yun Xu (2016). Effectiveness of cognitive behavioral therapy in treating bipolar disorder: an updated meta-analysis with randomized controlled trials. *Psychiatry and Clinical Neurosciences,* 70 (8), 351-361.

34. **Bo Cao**[#], Isabelle E. Bauer, Ajaykumar N. Sharma, Benson Mwangi, Thomas Frazier, Luca Lavagnino, Giovana B. Zunta-Soares, Consuelo Walss-Bass, David C. Glahn, Flávio Kapczinski, David A. Nielsen, Jair C. Soares (2016). Reduced hippocampus volume and memory performance in bipolar disorder patients carrying the BDNF val66met met allele ([#]corresponding author). *Journal of Affective Disorders,* 198, 1, 198–205.

35. Khader M. Hasan, Benson Mwangi, **Bo Cao**, Nicholas J. Tustison, Peter Kochunov, Mirjana Maletic-Savatic, Richrad E. Frye, Jair C. Soares. (2016) Entorhinal cortex thickness across the human lifespan. *Journal of Neuroimaging*, 26 (3), 278-282.

36. Ives Cavalcante Passos, Benson Mwangi, **Bo Cao**, Jane E. Hamilton, Mon-Ju Wu, Giovana B. Zunta-Soares, Joao Quevedo, Marcia Kauer-Sant'Anna, Flávio Kapczinski, Jair C. Soares (2016). Identifying a clinical signature of suicide attempts among patients with mood disorders: a machine learning approach. *Journal of Affective Disorders,* 193, 109–116.

37. Benson Mwangi, Mon-Ju Wu, **Bo Cao**, Ives C. Passos, Luca Lavagnino, Zafer Keser, Giovana B. Zunta-Soares, Khader M. Hasan, Flavio Kapczinski, Jair C. Soares (2016). Individualized prediction and clinical staging of bipolar disorders using neuroanatomical biomarkers and machine learning. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging* 2016 Mar 1;1(2):186-194.

38. Mon-Ju Wu, Ives Cavalcante Passos, Isabelle E. Bauer, Luca Lavagnino, **Bo Cao**, Giovana B. Zunta-Soares, Flávio Kapczinski, Benson Mwangi, Jair C. Soares (2016). Individualized prediction of euthymic bipolar disorder patients using the Cambridge neuropsychological test automated battery (CANTAB) and machine learning. *Journal of Affective Disorders*, 192, 219–225.

39. **Bo Cao**, Ives Cavalcante Passos, Benson Mwangi, Isabelle E. Bauer, Giovana B. Zunta-Soares, Flávio Kapczinski, David A. Nielsen, Jair C. Soares (2016). Hippocampal volume and verbal memory performance in late-stage bipolar disorder. *Journal of Psychiatric Research*, 73, 102-107.

40. Cristian Patrick Zeni, Benson Mwangi, **Bo Cao**, Khader M. Hasan, Consuelo Walss-Bass, Jair C. Soares (2016). Interaction between BDNF rs6265 met allele and low family cohesion is associated with smaller left hippocampal volume in pediatric bipolar disorder. *Journal of Affective Disorder*, 189, 94–97.

41. Yun-Long Tan, Yan-Li Li, Shu-Ping Tan, Zhiren Wang, Fu-De Yang, **Bo Cao**, Giovana B Zunta-Soares, Jair C Soares, Xiangyang Zhang (2015). Increased interleukin-2 serum levels was associated with psychopathological symptoms and cognitive deficits in treatment-resistant schizophrenia. *Schizophrenia Research*, 169, 1-3, 16-21. DOI:10.1016/J.Schres.2015.10.038.

42. **Bo Cao***, Benson Mwangi*, Khader M. Hasan, Sudhakar Selvaraj, Cristian P. Zeni, Giovana B. Zunta-Soares, Jair C. Soares (2015). Development and validation of a brain maturation index using longitudinal neuroanatomical scans. (*co-first author). *Neuroimage,* 2015 Aug 15; 117:311-8. DOI: 10.1016/J.Neuroimage.2015.05.071.

43. Luca Lavagnino, **Bo Cao**, Benson Mwangi, Mon-Ju Wu, Marsal Sanches, Zunta-Soares B. Giovana, Flavio Kapczinski, Jair C. Soares (2015). Changes in the corpus callosum in women with late-stage bipolar disorder. *Acta Psychiatrica Scandinavica.* 2015 Jun; 131(6):458-64. DOI: 10.1111/Acps.12397.

44. Mirella Díaz-Santos, **Bo Cao**, Arash Yazdanbakhsh, Daniel J. Norton, Sandy Neargarder, Alice Cronin-Golomb (2015). Perceptual, cognitive and personality rigidity in Parkinson's disease. *Neuropsychologia*. 2015 Mar; 69:183-93. DOI: 10.1016/J.Neuropsychologia.2015.01.044.

45. Mirella Díaz-Santos, **Bo Cao**, Samantha Mauro, Arash Yazdanbakhsh, Sandy Neargarder, Alice Cronin-Golomb (2015). The effect of visual cues on the resolution of perceptual ambiguity in Parkinson's disease and normal aging. *The Journal of the International Neuropsychological Society.* 2015 Feb; 21(2):146-55. DOI: 10.1017/S1355617715000065.

46. **Bo Cao,** Ennio Mingolla, Arash Yazdanbakhsh (2015). Tuning properties of MT and MSTd and divisive interactions for eye-movement compensation. *PLoS ONE,* 11/2015; 10(11):E0142964. DOI:10.1371/Journal.Pone.0142964.

47. **Bo Cao**, Ennio Mingolla, Arash Yazdanbakhsh (2013). A computational study of brightness-related responses in visual cortex. *Journal of Vision, 13 (1): 8.*

48. **Bo Cao**, Arash Yazdanbakhsh, Ennio Mingolla (2011). The effect of contrast intensity and polarity in achromatic watercolor effect. *Journal of Vision, 11 (3): 18.*

INVITED TALKS

1. **Bo Cao** (2019). Answering the Challenges in Psychiatry and Aging with Data and Machine Learning.
   Government of Alberta Deputy Ministers and President's Executive Committee of University of Alberta, Canada

2. **Bo Cao** (2019). The impacts of Artificial Intelligence on human mental health in the future.
   Action for Healthy Communities (Keynote)

3. **Bo Cao** (2019). Artificial Intelligence and mental health.
   The 7 Kangning International Forum on Psychiatry: AI Symposium (Host and Keynote)

4. **Bo Cao** (2019). Machine Learning and Mental Health Data.
   West China Hospital, China

5. **Bo Cao** (2019). Challenges and Efforts in Artificial Intelligence and Mental Health.
   Action for Healthy Communities: the impact of AI on our life (Keynote)

6. **Bo Cao** (2019). Applications of Machine Learning in Psychiatry.
   Northern Alberta Clinical Trials and Research Centre

7. **Bo Cao** (2019). Machine Learning in Psychiatry: An Introduction and Applications.
   18th Annual Psychiatry Research Day, University of Alberta

8. **Bo Cao** (2019). AI to advance neuroscience of normal or abnormal aging process.
   Turkish Association for Psychopharmacology 11th International Congress on Psychopharmacology

9. **Bo Cao** (2019). Big data and AI in Psychiatry.
   Turkish Association for Psychopharmacology 11th International Congress on Psychopharmacology

10. **Bo Cao** (2019). Why Do We Need Machine Learning in Psychiatry?
    China Medical University, China

11. **Bo Cao** (2019). Introduction to Machine Learning in Mental Health
    West China Hospital, China

12. **Bo Cao** (2019). An Introduction to Machine Learning in Psychiatry
    Wenzhou Medical University, China

13. **Bo Cao** (2018). Machine Learning and Brain Imaging in Psychiatry
    Department of Psychology, University of Alberta, Canada

14. **Bo Cao** (2018). Case Studies of Machine Learning and Brain Imaging in Psychiatry
    Department of Medicine, University of Alberta, Canada

15. **Bo Cao** (2018). Predicting Clinical Outcomes of Mental Disorders using Machine Learning
    Department of Medical Genetics, University of Alberta, Canada

16. **Bo Cao** (2018). Individualized Identification of Mental Disorders and Prediction of Clinical Outcomes using Machine Learning

    RISING STARS – Personalized Healthcare Symposium, Canada

17. **Bo Cao** (2018). Predict treatment outcomes in psychiatry with machine learning

    McMaster University, Canada

18. **Bo Cao** (2018). Individualized prediction of clinical outcomes and brain maturation using machine learning

    Harvard Medical School (presentation in a lab setting), US

19. **Bo Cao** (2017). Probing brain disorders with brain imaging and machine learning
    The University of Alberta, Canada

20. **Bo Cao** (2017). Selected studies in brain imaging, machine learning, and brain disorders.
    Johns Hopkins University, US

21. **Bo Cao** (2017). Topics in neuroimaging and psychiatry
    Harris County Psychiatric Center, US

22. **Bo Cao** (2016). Lifespan gyrification trajectories of human brain in healthy individuals and patients with major psychiatric disorders.
    Translational Psychiatry Program, the University of Texas Health Science Center at Houston

23. **Bo Cao** (2016). Psychiatry, brain imaging and machine learning

    Beijing Huilongguan Psychiatry Hospital, China

24. **Bo Cao** (2016). Psychiatry, brain imaging and machine learning

    Guangzhou Brain Hospital, China

25. **Bo Cao** (2016). Psychiatry, brain imaging and machine learning

    Huazhong University of Science and Technology, China

26. **Bo Cao** (2016). Psychiatry, brain imaging and machine learning

    Xinxiang Medical University, China

CONFERENCE PRESENTATIONS

1. **Bo Cao**, Benson Mwangi, Ives Cavalcante Passos, Mon-Ju Wu, Zafer Keser, Giovana B. Zunta-Soares, Dianping Xu, Khader M. Hasan, Jair C. Soares (2016). Lifespan gyrification trajectory of human brain and accelerated aging of major psychiatric disorders. *Texas Academia-Industry Roundtable: Grand Challenges in Neuroscience 2016 (Poster and Abstract).*

2. **Bo Cao**, Jeffrey A. Stanley, Ives Cavalcante Passos, Benson Mwangi, Sudhakar Selvaraj, Giovana B. Zunta-Soares, Jair C. Soares (2016). Elevated choline-containing compound levels in rapid cycling bipolar disorder. *Society of Biological Psychiatry 2016 (Poster and Abstract).*

3. **Bo Cao**, Jeffrey A. Stanley, Ives Cavalcante Passos, Benson Mwangi, Sudhakar Selvaraj, Giovana B. Zunta-Soares, Jair C. Soares (2016). Elevated choline-containing compound levels in rapid cycling bipolar disorder. *Human Brain Mapping 2016 (Poster and Abstract).*

4. Noha Abdel-Gawad, Tomas Melicher, **Bo Cao**, Benson Mwangi, Salih Selek, Marsal Sanchez, Giovana Zunta-Soares, Jair C. Soares (2016). Acute lithium therapy increases cortical thickness in patients with bipolar disorder. *Society of Biological Psychiatry 2016* (Poster and Abstract).

5. Manu S Sharma, Tomas Melicher, Mon-Ju Wu, Ives Cavalcante Passos, **Bo Cao**, Benson Mwangi (2016). Using multivariate pattern analysis to detect neuroimaging markers in major depression: A systematic review and meta-analysis. *Society of Biological Psychiatry 2016* (Poster and Abstract).

6. **Bo Cao**, Jeffrey A. Stanley, Sudhakar Selvaraj, Benson Mwangi, Ives Cavalcante Passos, Giovana Zunta-Soares, Jair C. Soares (2015). Evidence of altered membrane phospholipid metabolism in anterior cingulate cortex and subcortical areas of patients with bipolar disorder I: A multi-voxel ^{1}H MRS study. *Society of Biological Psychiatry 2015 (Talk and Abstract).*

7. **Bo Cao**, Isabelle E. Bauer, Ajaykumar N. Sharma, Benson Mwangi, Luca Lavagnino, Giovana B. Zunta-Soares, Flavio P. Kapczinski, Jair C. Soares (2015). Smaller hippocampal volumes and verbal learning task deficits in bipolar patients with BDNF val66met (rs6265) gene polymorphism. *Society of Biological Psychiatry 2015 (Poster and Abstract).*

8. **Bo Cao**, Benson Mwangi, Khader M. Hasan, Sudhakar Selvaraj, Giovana B. Zunta-Soares, Jair C. Soares (2015). Development and validation of a brain maturation index using longitudinal neuroanatomical scans. *Society of Biological Psychiatry 2015 (Poster and Abstract).*

9. **Bo Cao**, Benson Mwangi, Khader M. Hasan, Sudhakar Selvaraj, Giovana B. Zunta-Soares, Jair C. Soares (2014). Development and validation of a brain maturation index using longitudinal neuroanatomical scans. *The International Society for Magnetic Resonance in Medicine 2014 (Poster and Abstract).*

10. **Bo Cao**, Benson Mwangi, Khader M. Hasan, Sudhakar Selvaraj, Giovana B. Zunta-Soares, Jair C. Soares (2014). Development and validation of a brain maturation index using longitudinal neuroanatomical scans. *21st Annual Neuroscience Poster Session at UT Neuroscience Research Center (Poster and Abstract).*

11. **Bo Cao**, Evan. Eyuboglu, Andrew Meckel, Arash Yazdanbakhsh (2014). Dissociation of pursuit eye movement and perception of visual motion under binocular and dichoptic conditions. *Annual Meeting of Society for Neuroscience 2014 (Poster and Abstract).*

12. **Bo Cao**, Arash Yazdanbakhsh (2014). A novel 3D/dichoptic presentation system compatible with large field eye tracking. *Vision Science Society 2014 (Poster and Abstract).*

13. **Bo Cao**, Arash Yazdanbakhsh (2014). A novel system for 3D/dichoptic presentation. *Computational and Mathematical Models in Vision 2014 (Talk and Abstract).*

14. Arash Yazdanbakhsh, **Bo Cao** (2014). Correlation between motion perception and pursuit eye movements. *Computational and Mathematical Models in Vision 2014 (Talk and Abstract).*

15. **Bo Cao**, Ennio Mingolla, Arash Yazdanbakhsh (2013). MSTd cells and eye movement compensation. *International Conference on Cognitive and Neural Systems 2013 (Poster and Abstract).*

16. **Bo Cao**, Arash Yazdanbakhsh (2013). A neural model of MSTd area for eye movement compensation. *International Conference on Cognitive and Neural Systems 2013 (Poster and Abstract).*

17. **Bo Cao**, Arash Yazdanbakhsh (2013). A neural model of MSTd neurons for eye movement compensation. *Computational and Mathematical Models in Vision 2013 (Talk and Abstract).*

18. **Bo Cao**, Ennio Mingolla, Arash Yazdanbakhsh (2012). Slow brightness-related responses in V1 are caused by local, feedback, or horizontal connections? *Annual Meeting of Society for Neuroscience 2012 (Talk and Abstract).*

19. **Bo Cao**, Ennio Mingolla, Arash Yazdanbakhsh (2012). The role of feedback and long-range horizontal connections in brightness-related responses in visual cortex: a computational model. *Vision Science Society 2012 (Poster and Abstract).*

20. Gennady Livitz, **Bo Cao**, Ennio Mingolla (2012). Perception of a positive afterimage in neon color spreading displays. *Vision Science Society 2012 (Poster and Abstract).*

21. **Bo Cao**, Arash Yazdanbakhsh, Ennio Mingolla (2011). Brightness response in V1 and V2, a computational model. *Vision Science Society 2011 (Poster and Abstract).*