

CURRICULUM VITAE
Ali-Mohammad Golestani, Ph.D.

Tom Baker Cancer Center (TBCC)
Foothills Medical Center
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EDUCATION:

2006 - 2011 Doctor of Philosophy (Biomedical Engineering)
University of Calgary, Calgary, AB, Canada
1998 - 2001 Master of Science (Biomedical Engineering)
University of Tehran, Tehran, Iran
1994 - 1998 Bachelor of Science (Electrical Engineering)
University of Tehran, Tehran, Iran

PROFESSIONAL EXPERIENCE:

10/2021 – present Medical Physicist (MRI), Tom Baker Cancer Center, Calgary, Canada
05/2016 – 10/2021 MRI Physicist/Engineer, Toronto Neuroimaging, Department of Psychology, University of Toronto, Toronto, Canada
12/2012 – 05/2016 Post-doctoral fellow, Rotman Research Institute, Baycrest, University of Toronto, Toronto, Canada
06/2011 – 12/2012 Post-doctoral fellow, Center for Biomedical Imaging, New York University Medical Center, New York, USA
01/2011 - 06/2011 Research Associate, Seaman Family MR Research Centre, University of Calgary, Calgary, Canada

PROFESSIONAL DEVELOPMENT AND CERTIFICATES:

2022 Member of the Canadian College of Medical Physicist (MCCP)
2020 Artificial Intelligence Certificate, University of Toronto School of Continuing Studies.
2019 Data Science Certificate, University of Toronto School of Continuing Studies.

RESEARCH INTERESTS

- Medical Imaging
- Medical Signal/Image Processing
- Machine Learning
- Data Science
- Neuroimaging
- Functional MRI
- Diffusion MRI
- Multimodal Brain Imaging

PROFESSIONAL MEMBERSHIPS & AFFILIATIONS:

- International Society for Magnetic Resonance in Medicine (ISMRM) 2007-present
- Organization for Human Brain Mapping (OHBM) 2009-present
- Canadian Organization of Medical Physicist (COMP) 2021-present

ORGANIZER/CHAIR:

- 2021 Session facilitator, ISMRM. Explorations of artificial intelligence in neuroimaging
- 2020 Co-organizer, OHBM Symposium. Discerning signal from artifact: Current issues in resting-state fMRI quality control.

REVIEWS:

- **Review editor**
 - Frontiers in Brain Imaging Methods
- **AD-HOC REVIEWER:**
 - Human Brain Mapping (HBM)
 - Neuroimage
 - PLOS One
 - Brain Connectivity
 - Frontiers in Neuroscience
 - Frontiers in Neurology
 - Journal of Magnetic Resonance Imaging (JMRI)
 - Journal of Medical Imaging and Health Informatics.
 - ISMRM Conference
 - OHBM Conference
 - Journal of Applied Clinical Medical Physics
 - IEEE Transaction on Biomedical Engineering

HONORS AND AWARDS:

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| 2010 - 2011 | Queen Elizabeth II Graduate Scholarship (Doctoral) |
| 2009 - 2010 | Queen Elizabeth II Graduate Scholarship (Doctoral) |
| 2009, 2011 | Best presentation award for research trainees in Calgary Diagnostic Imaging Research Day |
| 2015 | Ontario Research Coalition Early Researcher Award. |

TEACHING EXPERIENCE AND CERTIFICATES:

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| University of Toronto | |
| ● Guest lecturer (two sessions) at <i>Human Neuroimaging Course</i> | 2017 - 2021 |
| ● Monthly MRI safety training for new users. | 2016 - 2021 |
| University of Calgary | |
| ● Instructional Skills Workshop (ISW) Certificate | 2006 |
| ● University Teaching Certificate (UTC) | 2007 |
| ● Teaching Assistant in Computing for Engineers I (C++) | 2007 - 2010 |
| ● Teaching Assistant in Electric Circuits and Systems | 2007 - 2010 |
| ● Teaching Assistant in Vector Calculus | 2008 |

INVITED TALKS:

International

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| April 2022 | New Jersey Institute of Technology BME Graduate Seminar, New Jersey, USA |
| April 2017 | Current Issues in Brain Function Study Group, 25 th International Society for Magnetic Resonance in Medicine, Honolulu, Hawaii, USA |
| Sep 2014 | MGH/HST Martinos center for Biomedical Imaging, Boston, MA, USA |
| Sep 2014 | McLean Hospital, Boston, MA, USA |
| Nov 2013 | Laureate Institute for Brain Research, Tulsa, OK, USA |
| National: | |
| Feb 2021 | ToNI User Meeting, Toronto, ON |
| Feb 2020 | ToNI User Meeting, Toronto, ON |
| Jan 2020 | Krembil Neuroimaging Rounds at Toronto Western Hospital. Toronto, ON. |
| Nov. 2018 | ToNI User Meeting, Toronto, ON |
| April 2018 | Krembil Neuroimaging Rounds at Toronto Western Hospital. Toronto, ON |

PATENTS:

1. JJ Chen, AM Golestani, LL Wei. Quantitative mapping of cerebrovascular reactivity using resting-state functional magnetic resonance imaging. Patent number: 10898143

PEER-REVIEWED PUBLICATIONS:

1. AY Li, N Ladyka-Wojcik, H Qazilbash, AM Golestani, DB Walter, CB Martin, MD Barense. Multimodal object representations rely on investigative coding. Submitted to eLife. Impact Factor: 8.713
2. NR Bouffard, AM Golestani, IK Brunec, B Bellana, MD Barense, M Moscovitch. Signal voxel autocorrelation uncovers gradients of temporal dynamics in the hippocampus and entorhinal cortex during rest and navigation. Submitted to the Cerebral Cortex. Impact Factor: 5.043.
3. G Caughlan, N Bouffard, AM Golestani, P Thakral, D Schacter, CL Grady, M Moscovitch. Transcranial magnetic stimulation to the angular gyrus modulates the temporal organization of the hippocampus and entorhinal cortex. Submitted to the Cerebral Cortex. Impact Factor: 5.043.
4. AM Golestani, JJ Chen. Performance of temporal and spatial ICA in identifying and removing low-frequency physiological effects and motion in resting-state fMRI. *Frontiers in Neuroscience* 16:867243 (2022). Impact factor: 3.566.
5. AM Golestani, JJ Chen. Controlling for the effect of arterial-CO₂ fluctuations in resting-state fMRI: Comparing end-tidal CO₂ clamping and retroactive CO₂ correction. *Neuroimage* 216. 116874 (2020). Impact factor: 5.902.
6. PPW Chu, AM Golestani, JB Kwinta, YB Khatamian, JJ Chen. Characterizing the modulation of resting-state fMRI metrics by baseline physiology. *Neuroimage* 173: 72 - 87 (2018). Impact factor: 5.902.

7. AM Golestani, Z Faraji-Dana, M Keyvanrad, K Setsompop, SJ Graham, JJ Chen. Simultaneous multislice resting-state functional magnetic resonance imaging at 3 Tesla: Slice-acceleration-related biases in physiological effects. *Brain Connectivity* 8(2): 82 - 93 (2018). Impact factor: 5.263.
8. AM Golestani, JB Kwinta, YB Khatamian, JJ Chen. The effect of low-frequency physiological correction on the reproducibility and specificity of resting-State fMRI metrics: Functional connectivity, ALFF, and ReHo. *Frontiers in Neuroscience* 11: 546 (2017). Impact factor: 3.566.
9. AM Golestani, LL Wei, JJ Chen. Quantitative mapping of cerebrovascular reactivity using resting-state BOLD fMRI: Validation in healthy adults. *Neuroimage* 138: 147 – 163 (2016). Impact factor: 5.902.
10. AM Golestani, JB Kwinta, SC Strother, YB Khatamian, JJ Chen. The association between cerebrovascular reactivity and resting-state fMRI functional connectivity in healthy adults: The influence of basal carbon dioxide. *Neuroimage* 132: 301 – 313 (2016). Impact factor: 5.902.
11. Y Khatamian, AM Golestani, D Ragot, J Chen. Spin-echo resting-state functional connectivity in high-susceptibility regions: Accuracy, reliability and the impact of physiological noise. *Brain Connectivity* 6(4): 283 – 297 (2016). Impact factor: 5.263.
12. S Halani, JB Kwinta, AM Golestani, YB Khatamian, JJ Chen. Comparing cerebrovascular reactivity measured using BOLD and cerebral blood flow MRI: The effect of basal vascular tension on vasodilatory and vasoconstrictive reactivity. *Neuroimage* 110: 110 – 123 (2015). Impact factor: 5.902.
13. AM Golestani, C Chang, J Kwinta, YB Khatamian, JJ Chen. Mapping the End-Tidal CO₂ Response Function in the Resting-State BOLD fMRI Signal: Spatial Specificity, Test-retest Reliability and Effect of fMRI Sampling Rate. *Neuroimage* 104: 266 – 277 (2015). Impact factor: 5.902.
14. AM Golestani, L Miles, FX Castellanos, D Malaspina, M Lazar. Constrained by our connections: White matter's key role in inter-individual variability in visual working memory capacity. *Journal of Neuroscience*. 34(45): 14913 – 14918 (2014). Impact factor: 5.673.
15. J Jimenez, R Yang, N Nathoo, VI Varshney, AM Golestani, B Goodyear, L Metz, J Dunn. Detection of reduced interhemispheric cortical communication during task execution in multiple sclerosis patients using functional near-infrared spectroscopy. *Journal of Biomedical Optics*. 19(7), 076008 (2014). Impact factor: 2.785.
16. AM Golestani, S Tymchuk, AM Demchuk, BG Goodyear. Longitudinal evaluation of resting-state fMRI after acute stroke with hemiparesis. *NeuroRehabilitation & Neural Repair*. 27(2): 153 – 163 (2013). Impact factor: 4.711.
17. VP Varshney, N Liapounova, AM Golestani, B Goodyear, JF Dunn. Detection of inter-hemispheric functional connectivity in motor cortex with coherence analysis. *Journal of the European Optical Society* 7. 12047 (2012). Impact factor: 0.421.
18. AM Golestani, BG Goodyear. A resting-state connectivity metric independent of temporal signal-to-noise ratio and signal amplitude. *Brain Connectivity* 1(2): 159 – 167 (2011). Impact factor: 5.263.
19. AM Golestani, BG Goodyear. Regions of interest for resting-state fMRI analysis

determined by inter-voxel cross-correlation. *Neuroimage* 56(1): 246-51 (2011).
Impact factor: 5.902.

PEER-REVIEWED ABSTRACTS:

1. A Addeh, F Vega, RJ Williams, AM Golestani, GB Pike, ME MacDonald. Using BOLD-fMRI to compute respiration volume per time (RVT) and respiration variation (RV) with convolutional neural network (CNN) in children. *International Society for Magnetic Resonance in Medicine*, Toronto, Canada, June 2023
2. A Addeh, KA Lopez, F Vega, AM Golestani, ME MacDonald. Limitations of the derived respiratory variation measurements used in functional magnetic resonance imaging. *IEEE International Symposium on Biomedical Imaging*. Columbia, April 2023.
3. AM Golestani, NR Bouffard, M Moscovitch, MD Barensse. Autocorrelation of the fMRI signal dynamically changes during different brain states. *International Society for Magnetic Resonance in Medicine*, Toronto, Canada, June 2023.
4. AM Golestani, JJ Chen. Comparing the efficacy of data-driven noise regression in preserving age-related resting state connectivity information. *International Society for Magnetic Resonance in Medicine*, Toronto, Canada, June 2023.
5. AY Li, N Ladyka-Wojcik, H Qazilbash, AM Golestani, DB Walther, CB Martin, MD Barensse. Forming 3-dimensional multimodal object representations relies on integrative coding. *Neuroscience*. San Diego, USA, November 2022.
6. AM Golestani, JJ Chen. Comparing the efficiency of data-driven noise regression in removing cardiac and respiratory signals from rs-fMRI: Differences across age groups. *30th International Society for Magnetic Resonance in Medicine*, London, May 2022.
7. AY Li, N Ladyka-Wojcik, CB Martin, H Qazilbash, AM Golestani, DB Walther, MD Barensse. Forming 3-dimensional multimodal object representations relies on integrative coding. *Vision Sciences Society*. Florida, USA, May 2022
8. AM Golestani, NR Bouffard, MD Barensse, M Moscovitch. Brain function induces alteration in the autocorrelation of the fMRI signal. *29th International Society for Magnetic Resonance in Medicine*. Virtual Conference, May 2021.
9. AM Golestani, JJ Chen. Performance of temporal and spatial ICA in identifying and removing physiological artifacts in resting-state fMRI. *28th International Society for Magnetic Resonance in Medicine*. Virtual conference, August 2020.
10. AM Golestani, JJ Chen. The effect of end-tidal PETCO₂ clamping on resting-state fMRI connectivity. *27th International Society for Magnetic Resonance in Medicine*. Montreal, Canada, May 2019.
11. AM Golestani, B Bellana, I Brunec, M Moscovitch. Investigating autocorrelation patterns in the human hippocampus using resting-state fMRI. 6th Biennial Conference on Resting-State and Brain Connectivity. Montreal, Canada, September 2018.
12. AM Golestani, L Wei, J Chen. Quantitative mapping of cerebrovascular reactivity using resting-state BOLD fMRI: A validation in healthy adults. *25th International Society for Magnetic Resonance in Medicine*. Honolulu, Hawaii, April 2017.

13. AM Golestani, J Kwinta, S Strother, Y Khatamian, J Chen. The association between cerebrovascular reactivity and resting-state fMRI connectivity in healthy adults. *24th International Society for Magnetic Resonance in Medicine*. Singapore, May 2016.
14. Z Faraji-Dana, AM Golestani, Y Khatamian, S Graham, J Chen. Comparison of physiological noise in multiband-EPI and regular EPI fMRI. *24th International Society for Magnetic Resonance in Medicine*. Singapore, May 2016.
15. Z Faraji-Dana, AM Golestani, Y Khatamian, S Graham, J Chen. Slice-acceleration related biases in multiband-EPI resting-state functional connectivity. *24th International Society for Magnetic Resonance in Medicine*. Singapore, May 2016.
16. S Saraf, C Saverino, AM Golestani. A robust and adaptive decision-making algorithm for detecting brain networks using functional MRI within the spatial and frequency domain. *IEEE International Conference on Biomedical and Health Informatics*, Las Vegas, USA, February 2016.
17. AM Golestani, JJ Chen. The effect of correcting low-frequency physiological modulations on the specificity of the resting-state connectivity maps. *21st Annual Meeting of the Organization for Human Brain Mapping*, Honolulu, Hawaii, USA June 2015.
18. S Halana, JB Kwinta, AM Golestani, YB Khatamian, JJ Chen. Comparing cerebrovascular reactivity measured using BOLD and cerebral blood flow at various vascular tension levels. *International Society for Magnetic Resonance in Medicine Eighteen Scientific Meeting*, Toronto, Canada, June 2015.
19. PPW Chu, AM Golestani, JB Kwinta, YB Khatamian, JJ Chen. Physiological modulators of resting-state MRI functional connectivity. *International Society for Magnetic Resonance in Medicine Eighteen Scientific Meeting*, Toronto, Canada, June 2015.
20. AM Golestani, JJ Chen, Effect of low-frequency physiological noise correction on the reproducibility of resting-state functional connectivity measurements. *4th biennial conference on resting state/Brain connectivity*. Boston, MA, USA, September 2014
21. AM Golestani, JJ Chen, Regional variability in delay of brain response to resting-state end-tidal CO₂ fluctuation, *20th Annual Meeting of the Organization for Human Brain Mapping*, Hamburg, Germany, June 2014.
22. AM Golestani, JJ Chen, Reliability of resting-state connectivity using simultaneous multislice fMRI with Ultra-short TR, *20th Annual Meeting of the Organization for Human Brain Mapping*, Hamburg, Germany, June 2014.
23. AM Golestani, JJ Chen, The end-tidal CO₂ response function in resting-state BOLD fMRI, *International Society for Magnetic Resonance in Medicine Eighteen Scientific Meeting*, Milan, Italy, May 2014.
24. AM Golestani, JJ Chen, Estimating the physiological response functions in resting-state BOLD: the effect of acquisition speed, *International Society for Magnetic Resonance in Medicine Eighteen Scientific Meeting*, Milan, Italy, May 2014.
25. AM Golestani, JJ Chen, Inter-regional differences in brain response delay to end-tidal CO₂ estimated from resting-state fMRI, *International Society for Magnetic Resonance in Medicine Eighteen Scientific Meeting*, Milan, Italy, May 2014.

26. AM Golestani, M Lazar. Correcting motion induced connectivity changes in resting-state fMRI. *International Society for Magnetic Resonance in Medicine Seventeen Scientific Meeting*, Salt lake city, USA, April 2013.
27. AM Golestani, D Malaspina, L Miles, M Lazar. Altered thalamic connectivity in schizophrenia. *International Society for Magnetic Resonance in Medicine Seventeen Scientific Meeting*, Salt lake city, USA, April 2013.
28. AM Golestani, D Malaspina, L Miles, N Peccerelli, M Lazar. White matter microstructure correlates of visual working memory in schizophrenia patients and healthy controls. *International Society for Magnetic Resonance in Medicine Seventeen Scientific Meeting*, Salt lake city, USA, April 2013.
29. M Lazar, D Malaspina, L Miles, AM Golestani, N Peccerelli. Altered white matter myelination in chronic schizophrenia. *International Society for Magnetic Resonance in Medicine Seventeen Scientific Meeting*, Salt lake city, USA, April 2013.
30. JG Raya, E Dettmann, AM Golestani, Block TK. IN vivo DTI of articular cartilage at 3T with a spin echo radial diffusion tensor imaging (RAISED) sequence. *International Society for Magnetic Resonance in Medicine Seventeen Scientific Meeting*, Salt lake city, USA, April 2013.
31. AM Golestani, AM Demchuk, BG Goodyear. Resting-state fMRI of acute stroke: a potential predictor of treatment response and outcome. *Canadian Stroke Congress*. Calgary, AB, Canada, October 2012.
32. AM Golestani, M Lazar, Unsupervised Parcellation of Precentral Gyrus Using Resting-state fMRI. *Proceedings of the International Society for Magnetic Resonance Research in Medicine Sixteenth Scientific Meeting*. Melbourne, Australia, May 2012.
33. AM Golestani, BG Goodyear. Relative Connectivity: Sensitive to changes in ROI size with no dependence on SNR and CNR. *17th Annual meeting of the Organization for Human Brain Mapping*. Quebec City, Canada, June 2011.
34. AM Golestani, BG Goodyear. A resting-state connectivity index with no dependence on SNR and CNR *Proceedings of the International Society for Magnetic Resonance Research in Medicine Seventeenth Scientific Meeting*. Montreal, Canada, May 2011.
35. AM Golestani, BG Goodyear. Stockwell Coherence of the Motor Resting State Reduces Within-Subject Variability Caused by Inadvertent Body Movements. *Proceedings of the International Society for Magnetic Resonance Research in Medicine Sixteenth Scientific Meeting*. Stockholm, Sweden, May 2010.
36. AM Golestani, BG Goodyear. Removing the seed size dependence of resting-state connectivity. *Society for Neuroscience Annual Meeting*, Chicago, IL, USA, October 2009.
37. AM Golestani, BG Goodyear. Task-based seed regions for resting-state fMRI analysis are susceptible to large vessels. *Society for Neuroscience Annual Meeting*, Chicago, IL, USA, October 2009.
38. AM Golestani, BG Goodyear. Activity-based seed regions for resting-state fMRI analysis are susceptible to large vessels. *15th Annual Meeting of the Organization for Human Brain Mapping*, San Francisco, CA, USA, June 2009.
39. AM Golestani, BG Goodyear. Stockwell coherence measures resting-state

- connectivity with low between-session variability. *15th Annual Meeting of the Organization for Human Brain Mapping*, San Francisco, CA, USA, June 2009.
40. AM Golestani, BG Goodyear. Resting-state connectivity in the motor cortex independent of seed size. *15th Annual Meeting of the Organization for Human Brain Mapping*, San Francisco, CA, USA, June 2009.
 41. AM Golestani, BG Goodyear. Activity-based seed regions for resting-state fMRI analysis are susceptible to large vessels. *Proceedings of the International Society for Magnetic Resonance Research in Medicine Sixteenth Scientific Meeting*, Honolulu, HI, USA, April 2009.
 42. AM Golestani, BG Goodyear. Stockwell coherence measures resting-state connectivity with low between-session variability. *Proceedings of the International Society for Magnetic Resonance Research in Medicine Sixteenth Scientific Meeting*, Honolulu, HI, USA, April 2009.
 43. AM Golestani, BG Goodyear. Better functional recovery following stroke is associated with normalization of resting-state functional connections. *Proceedings of the International Society for Magnetic Resonance Research in Medicine Sixteenth Scientific Meeting*, Toronto, ON, Canada, May 2008.
 44. AM Golestani, AM Demchuk, BG Goodyear. Incomplete recovery after stroke is associated with altered resting-state connections between motor cortices. *Society for Neuroscience Annual Meeting*, San Diego, CA, USA, November 2007.
 45. AM Golestani, BG Goodyear. Resting-state connectivity as an index for stroke recovery. *Annual Alberta Biomedical Engineering Conference*, Banff, AB, Canada, October 2007.
 46. AM Golestani, A Demchuk, M Goyal, BG Goodyear. Functional connectivity is altered during recovery following stroke. *13th Annual Meeting of the Organization for Human Brain Mapping*, Chicago, IL, USA, June 2007.
 47. AM Golestani, BG Goodyear. Brain connectivity following ischemic stroke: a potential tool for acute clinical assessment of brain function. *Annual Alberta Biomedical Engineering Conference*, Banff, AB, Canada, October 2006.
 48. AM Golestani, GA Hossein-Zadeh, H Soltanian-Zadeh. Clustering of SPMs generated with fMRI analysis methods for comparing analysis methods. *Third Iranian Conference on Machine Vision and Image Processing*, Tehran, Iran, February 2005.
 49. GA Hossein-Zadeh, AM Golestani, H Soltanian-Zadeh. A clustering framework for comparing fMRI data analysis methods. *IEEE International Symposium on Biomedical Imaging*. Arlington, VA, USA, April 2004.
 50. GA Hossein-Zadeh, AM Golestani, H Soltanian-Zadeh. Evaluation of fMRI analysis methods through a clustering-based approach. *11th Iranian Conference on Biomedical Engineering*, Tehran, Iran, February 2004.
 51. AM Golestani, A Houshangi. Comparisons of different methods for computing autocorrelation function for test of randomness. *2nd Iranian Society of Cryptography Conference*, Tehran, Iran, October 2003.
 52. AM Golestani, H Soltanian-Zadeh. Comparison of differential, ANOVA, and independent component analysis methods in analysis of functional MRI. *10th Iranian*

Conference on Electrical Engineering, Tabriz, Iran, May 2002.

53. AM Golestani, H Soltanian-Zadeh. Active region recognition in fMRI data using independent component analysis. *4th Studental Iranian Conference on Electrical Engineering*, Tehran, Iran, September 2001.

SUPERVISION EXPERIENCE:

- 2018 - 2021 Two undergraduate students (Harry Zhu and Janice Liu) at Toronto Neuroimaging facility for developing ToNI participants database.
- 2016 - 2021 MRI Technologists, students and researchers at Toronto Neuroimaging facility for MRI data acquisition and processing.
- 2015 - 2016 Lucy Wei, Co-op undergraduate student from University of British Columbia
- 2011 - 2012 Victoria Mosher, Master student in the University of Calgary

GRANT-WRITING EXPERIENCE:

- 2019 **Collaborator**, The New Frontiers in Research Fund. Primary investigator: Michael Mack, PhD.
- 2019 **Program Expert**, Stage 2 CIHR Foundation Grant. Primary investigator: Morgan Barensse, PhD.
- 2015 **Co-investigator**, The Canadian Partnership for Stroke Recovery Catalyst Grant. Primary investigator: J. Jean Chen, PhD
- 2012 **Co-investigator**, The National Institute of Health grant, Primary_investigator: Preeti Raghavan, MD.
- 2010 **Collaborator**: The Canadian Heart and Stroke Foundation. Primary investigator: Bradley Goodyear, PhD.