Tianwen Ma

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EDUCATION

2022	**University of Michigan School of Public Health**, Ann Arbor, MI
	Ph.D. in Biostatistics
	Dissertation: Novel Statistical Methods for EEG-Based Brain Computer Interfaces
	Advisors: Professors Jian Kang (Chair) and Jane E. Huggins
2018	**University of Michigan School of Public Health**, Ann Arbor, MI
	M.S. in Biostatistics
2015	**University of Michigan**, Ann Arbor, MI
	B.S. in Honors Statistics with High Distinction
	Thesis: A Functional Data Analysis Approach to Looking at Handwriting Data
	Advisor: Professor Edward Rothman
2015	**Sichuan University**, Chengdu, China
	B.S. in Statistics (Dual degree)

RESEARCH POSITIONS

Sep 2022 – Present	**Research Assistant Professor**
	Department of Biostatistics and Bioinformatics, Rollins School of Public Health, and Emory Brain Health Center, Emory University
	Develop novel statistical methods with applications to brain-computer interface and fMRI imaging data.
	Provide statistical support for physicians at Emory Brain Health Center (BHC).
	Serve on Emory Brain Health Center standing Data and Safety Monitoring Board (DSMB).
Jan 2017 – Aug 2022	**Graduate Student Research Assistant**
	Department of Radiology, School of Medicine, and Department of Biostatistics, School of Public Health, University of Michigan
	Supervisors: Professors Timothy D. Johnson and Bin Nan
	Provided semi-independent statistical consulting services to more than 20 radiology faculty members and submitted more than 40 abstracts and manuscripts to radiology journals and RSNA annual conferences.
Jan 2016 – April 2016	**Undergraduate Student Research Consultant**
	Consulting for Statistics, Computing & Analytics Research (CSCAR), University of Michigan

Supervisor: Professor Edward Rothman *(Emeritus)*
Built classification tree and logistic regression models to find significant risk factors for coronary artery disease adjusting for troponin level.

April 2015 – Dec 2015   **Undergraduate Student Researcher**
Department of Statistics, University of Michigan
Supervisor: Professor Edward Rothman *(Emeritus)*
Completed an honor thesis on handwriting data recognition with newly collected data (with IRB approval) by fitting functional data curve objects and applying principal differential analysis to create individual writing templates.

PUBLICATIONS (PUBLISHED)

1. Zhou, S., Hanna, T., **Ma, T.**, Johnson, T.D., Lamoureux, C., Johnson, J.O., Steenburg, S.D., Dunkle, J.W., and Chong, S., Daytime, Evening, and Overnight Shifts: The 24-hour Radiology Cycle and Impact on Interpretative Accuracy. *Emergency Radiology*. https://link.springer.com/article/10.1007/s10140-023-02161-6

2. Bamidele, O., Lee, E., Edith, S., Chaitanya Madamanchi, C., Sowmya, B., **Ma, T**., Apart, J., Lu, J.C., Adam, D., and Agarwal, P., (2023, January). Effects of Mitral Valve Prolapse on Quantification of Mitral Regurgitation and Ejection Fraction using Cardiac MRI. *Radiology: Cardiothoracic Imaging*. https://doi.org/10.1148/ryct.220069

3. Sella, E., Joshi, A., Balasubramanian, S., Senthilkumar, D., **Ma, T**., and Agarwal, P., (2022). Is there gender bias in radiology job postings? *Current Problems in Diagnostic Radiology*. https://doi.org/10.1067/j.cpradiol.2022.11.002

4. Turk, S., Wang, N. C., Kitis, O., Mohammed, S., **Ma, T**., Lobo, R., Kim, J., Camelo-Piragua, S., Johnson T.D., Kim, M.M., Junck, L., and Bapuraj, J. R., (2022). Comparative study of radiologists vs machine learning in differentiating biopsy-proven pseudoprogression and true progression in diffuse gliomas. *Neuroscience Informatics*, *2*(3), 100088. https://doi.org/10.1016/j.neuri.2022.100088

5. **Ma, T.**, Li, Y., Huggins, J.E., Zhu, J., and Kang, J., (2022). Bayesian inferences on neural activity in EEG-Based Brain-Computer Interface. *Journal of the American Statistical Association (JASA)*. https://doi.org/10.1080/01621459.2022.2041422

6. **Ma, T**., Huggins, J.E., and Kang, J., (2021, December). Adaptive sequence-based stimulus selection in an ERP-based Brain-Computer Interface by Thompson sampling in a multi-armed bandit problem. *In 2021 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) (pp. 3648-3655).* IEEE. https://doi.org/10.1109/BIBM52615.2021.9669724

7. Chong, S., Hanna, T., Lamoureux, C., **Ma, T**., Weber, S., Johnson, J.O., Friedberg, E., Pyatt Jr, R.S., Everett, C.J. and Johnson, T.D., (2021). Interpretations of examinations outside of radiologists' fellowship training: assessment of discrepancy rates among 5.9 million examinations from a national teleradiology databank. *American Journal of Roentgenology*. https://www.ajronline.org/doi/abs/10.2214/AJR.21.26656.

8. Ellis, C.N., Neville, S.J., Sayyouh, M., Elder, J.T., Nair, R.P., Gudjonsson, J.E., **Ma, T**., Kazerooni, E.A., Rubenfire, M. and Agarwal, P.P., (2021). Epicardial adipose tissue volume is greater in men with

severe psoriasis implying increased cardiovascular disease risk: A cross-sectional study. *Journal of the American Academy of Dermatology*. https://doi.org/10.1016/j.jaad.2021.09.069

9. Pujara, A.C., Joe, A.I., Patterson, S.K., Neal, C.H., Noroozian, M., **Ma, T**., Chan, H.P., Helvie, M.A. and Maturen, K.E., (2020). Digital breast tomosynthesis slab thickness: impact on reader performance and interpretation time. *Radiology*, *297*(3), pp.534-542. https://doi.org/10.1148/radiol.2020192805

10. Bapuraj, J.R., Bruzek, A.K., Tarpeh, J.K., Pelissier, L., Garton, H.J., Anderson, R.C., Nan, B., **Ma, T**. and Maher, C.O., (2019). Morphometric changes at the craniocervical junction during childhood. *Journal of Neurosurgery: Pediatrics*, *24*(3), pp.227-235. https://doi.org/10.3171/2019.4.PEDS1968

11. Türk, S., Kim, J., Lobo, R., Bapuraj, J., **Ma, T**., Johnson, T.D., Piragua, S.C., Junck, L.R. and Srinivasan, A., (2019). Differentiation of biopsy-proven true and pseudo-progression by conventional and functional MRI sequences. *European Congress of Radiology-ECR 2019*. https://dx.doi.org/10.26044/ecr2019/C-0958

12. Viglianti, B.L., Wale, D.J., **Ma, T**., Johnson, T.D., Bohnen, N.I., Wong, K.K., Ky, C., Frey, K.A., Townsend, D.M., Rubello, D. and Gross, M.D., (2019). Effects of plasma glucose levels on regional cerebral 18F-fluorodeoxyglucose uptake: Implications for dementia evaluation with brain PET imaging. *Biomedicine & Pharmacotherapy*, *112*, p.108628. https://doi.org/10.1016/j.biopha.2019.108628

13. Woolen, S.A., Kazerooni, E.A., Steenburg, S.D., Nan, B., **Ma, T**., Wall, A., Linna, N.B., Gayed, M.J., Kushdilian, M.V., Parent, K. and Cahalan, S., (2018). Optimizing electronic release of imaging results through an online patient portal. *Radiology*, *290*(1), pp.136-143. https://doi.org/10.1148/radiol.2018180883

14. Bailey, L.H., Jeffries, D.O., Bailey, J.J., Pinsky, R.W., Bailey, J.E., Nan, B., **Ma, T**. and Klein, K.A., (2018). Breast care problems on call: training residents to manage effectively. *Emergency Radiology*, *25*(4), pp.375-380. https://doi.org/10.1007/s10140-018-1593-z

MANUSCRIPTS UNDER REVISION

15. Chen, S., **Ma, T**., and Zhang, L., Bayesian dose-response modeling and external data borrowing. *Statistics in Biosciences (SIBS)* **(Revision Submitted)**

RERERACH GRANTS

ACTIVE

1. Georgia CTSA-BERD UL1TR002378 (PD/PI: **Ma T**; Co-I: Huggins J)   Aug 2022 – July 2023
   National Center for Advancing Translational Sciences of the National Institutes of Health. $20,000
   Forward Dynamic Event Selection Algorithm in ERP-Based Brain-Computer Interface

PRESENTATION

INVITED

1. Bayesian Signal Matching Training Framework for Data Integration in ERP- Based Brain-Computer Interface, Statistics Methods in Imaging (SMI), University of Minnesota, Minneapolis, MN, May 2023 (In-person).
2. Adaptive sequence-based stimulus selection in ERP-based Brain-Computer Interface, Translational Neuroengineering (TNE) Journal Club, University of Michigan, Ann Arbor, MI, Jun 2022 (Hybrid).
3. Bayesian inferences in EEG-based Brain-Computer Interface via the split-and-merge Gaussian process, Statistical Lecture Series No. 191, Remin University of China, Beijing, May 2022 (Online).
4. Bayesian inferences in EEG-based Brain-Computer Interface via the split-and-merge Gaussian process, *Senior PhD Student Research Showcase Symposium*, University of Michigan, Ann Arbor, MI, April 2022.
5. Bayesian inferences in EEG-based Brain-Computer Interface via the split-and-merge Gaussian process, Emory University, Atlanta, GA, Mar 2022.
6. Adaptive sequence-based stimulus selection in ERP-based Brain-computer Interface by Thompson Sampling in a multi-armed bandit problem, *the IEEE International Conference on Bioinformatics and Biomedicine (BIBM) 2021 Workshop*, Dec 2021 (Virtual)
7. Bayesian inferences in EEG-based Brain-Computer Interface via the split-and-merge Gaussian process, *Stanford CogT Lab*, Sep 2021 (Virtual).

CONTRIBUTED

8. Bayesian Signal Matching Training Framework for Data Integration in ERP-Based Brain-Computer Interface, *Center for Biomedical Imaging Statistics (CBIS)*, Emory University, Atlanta, GA, Mar 24, 2023.
9. Bayesian Signal Matching Training Framework for Data Integration in ERP-Based Brain-Computer Interface, *Eastern North American Region (ENAR) Spring Meeting*, Vanderbilt University, Nashville, TN, Mar 20, 2023.
10. Adaptive sequence-based stimulus selection in ERP-based Brain-computer Interface by Thompson Sampling in a multi-armed bandit problem, *Neuroscience Society (SfN)*, Nov 2021 (Virtual)
11. Bayesian inferences on neural activity in EEG-based Brain-Computer Interface, *Eastern North American Region (ENAR) Spring Meeting*, Mar 2021 (Virtual).
12. Bayesian inferences on neural activity in EEG-based Brain-Computer Interface, *Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS)*, Feb 2021 (Virtual).
13. Proposal of Bayesian inferences on neural activity in EEG-based Brain-Computer Interface, *Michigan Shark Tank Competition*, University of Michigan, Ann Arbor, MI, Feb 2020 (Hybrid).

DEPARTMENTAL SERVICES

2023 – 2024	BIOS Departmental Seminar Organizer (Co-organize with Dr. Chang Su)
2022 – 2023	BIOS MPH/MSPH Admission Committee (Member)
2022 – Present	Emory BHC Data Safety and Monitoring Board (Member)

REVIEW EXPERIENCE

2022	Statistics in Medicine
2022	Statistics in Biosciences (SIBS)
2022	Journal of American Statistical Association (JASA)
2021	Journal of Trauma Nursing

TEACHING EXPERIENCE

Sep 2015 – Dec 2015   **Undergraduate Student Instructor for Statistics 408 and Math 217**
University of Michigan, Department of Statistics
• Held discussion sessions on introductory statistical consulting for over 100 undergraduate students
• Answered questions during office hours, graded homework assignments, and mid-term exams

INDUSTRIAL EXPERIENCE

Jun 2020 – Aug 2020   **Experimental Intern (Remote)**
AbbVie Inc., Statistics, Data, and Statistical Science Department
• Reviewed existing methods and conduced simulation studies on Bayesian historical borrowing and dose-response clinical trials
• Delivered a final presentation and submitted the manuscript to Statistics in Biosciences (SIBS) *under review*

HONORS AND AWARDS

2021	Departmental Excellence in Research Honorable Mention
2021	Best Poster of Michigan Student Symposium for Interdisciplinary Statistical Science ([MSSISS](#)) (100 USD)
2020	Best Shark Tank Research Proposal Award (1000 USD)
2019	[American Society of Emergency Radiology](#) (ASER) Grant (6000 USD).
2016	Dean's Scholarship (21000 USD)
2014	Mathematical Contest in Modeling (MCM) Honorable Mentions
2013	The Second Prize Scholarship (3000 CNY)
2012	Kebo Scholarship (1500 CNY)

PROGRAMMING LANGUAGES

        • R (ggplot2), Python (Pytorch, Scikit-learn), MATLAB, SAS, and LaTeX.

SPOKEN LANGUAGES

- Native: Chinese | Fluent: English | Conversational: Spanish and Japanese