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
Advisor: Professor Jian Kang (Chair)

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: Dr. Edward Rothman

2015 **Sichuan University**, Chengdu, China
B.S. in Statistics (Dual degree)

RESEARCH POSITIONS

Jan 2017 – Present **Graduate Student Research Assistant**
University of Michigan School of Medicine, Department of Radiology
Supervisors: Dr. Timothy D. Johnson and Dr. 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**
University of Michigan Consulting for Statistics, Computing & Analytics Research (CSCAR)
Supervisor: Dr. Edward Rothman
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**
University of Michigan, Department of Statistics
Supervisor: Dr. Edward Rothman
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

1. Turk, S., Wang, N. C., Kitis, O., Mohammed, S., **Ma, T**., Lobo, R., ... & 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
2. **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
3. **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
4. 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.
5. 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
6. 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
7. 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
8. 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
9. 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
10. 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

11. 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

12. Chen, S., **Ma, T**. and Zhang, L., Bayesian dose-response modeling and external data borrowing. *Statistics in Biosciences (SIBS)* **(Revision Submitted)**
13. Sella, E., Balasubramanian, S., Joshi, A., **Ma, T**. and Johnson, T.D., Words matter: gendered language in cardiovascular imaging job postings. *Radiology Society of North America (RSNA).*

MANUSCRIPTS SUBMITTED

14. Noroozian, M., Savage, J.L.B., Pujara, A.C., Sakala, M.D., **Ma, T.** and Helvie, M.A. Comparing frequency and PPV3 of biopsies recommended after image assessment of asymptomatic and symptomatic women in contemporary breast imaging practice. *Radiology Society of North America (RSNA).*
15. Roseland, M.E., **Ma, T.**, Curci, N.E., Shampain, K.L., Stein, E.B., Wasnik, A.P., Sciallis, A.P., Uppal, S., Johnson, T.D. and Maturen, K.E., Neoadjuvant chemotherapy for high grade serious ovarian cancer: radiologic-pathologic correlation of response assessment and predictors of progression. *Radiology.*

PRESENTATION

INVITED

1. Adaptive sequence-based stimulus selection in ERP-based Brain-Computer Interface, Translational Neuroengineering (TNE) Journal Club, University of Michigan, Ann Arbor, June 2022 (Hybrid).
2. 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).
3. 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, April 2022.
4. Bayesian inferences in EEG-based Brain-Computer Interface via the split-and-merge Gaussian process, Emory University, Decatur, March 2022.
5. 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*, December 2021 (Virtual)
6. Bayesian inferences in EEG-based Brain-Computer Interface via the split-and-merge Gaussian process, *Stanford CogT Lab*, September 2021 (Virtual).

CONTRIBUTED

7. Adaptive sequence-based stimulus selection in ERP-based Brain-computer Interface by Thompson Sampling in a multi-armed bandit problem, *Neuroscience Society (SfN)*, November 2021 (Virtual)

8. Bayesian inferences on neural activity in EEG-based Brain-Computer Interface, *Eastern North American Region (ENAR) Spring Meeting*, March 2021 (Virtual).
9. Bayesian inferences on neural activity in EEG-based Brain-Computer Interface, *Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS)*, February 2021 (Virtual).
10. Proposal of Bayesian inferences on neural activity in EEG-based Brain-Computer Interface, *Michigan Shark Tank Competition*, University of Michigan, Ann Arbor, Feb 2020 (Hybrid).

REVIEW EXPERIENCE

2022	Statistics in Biosciences (SIBS)
2022	Journal of American Statistical Association (JASA)
2022	Statistics in Medicine
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
- Conducted simulation studies on Bayesian historical borrowing with application to dose-response clinical trials under varying settings
- Delivered a final presentation to DSS colleagues 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 (TensorFlow, Scikit-learn), MATLAB, LaTeX, and SAS

SPOKEN LANGUAGES

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