Navid Mohseni

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Research Interests

Biostatistics, Bayesian Inference, Spatiotemporal Epidemiology, Statistical Modeling, Public Health.

Education

Marquette University — Milwaukee, WI
Ph.D. Candidate in Computational Mathematical and Statistical Sciences — *Jan 2023 — Present*
- Passed Comprehensive Examination (Aug 2024).

Shahid Beheshti University of Medical Sciences — Tehran, Iran
Master of Science in Biostatistics — *Sept 2017 — Sept 2020*
- Awarded best annual thesis among master's students.
- Ranked 10th in national exam out of 2,000 participants.

Shahid Beheshti University — Tehran, Iran
Bachelor of Science in Statistics — *Sept 2011 — Sept 2015*

Research Experience

Graduate Teaching and Research Assistant — Jan 2023 — Present
Marquette University — *Milwaukee, WI*
- **Thesis: Bayesian Spatiotemporal Modeling of Syphilis**
- Collaborated with the Wisconsin Department of Health Services (WDHS) to analyze syphilis spread, translating complex epidemiological data into actionable public health insights.
- Developed a hierarchical Bayesian spatiotemporal model using R-INLA to identify risk factors and hotspots.
- Implemented variance partitioning to quantify the specific contribution of spatial vs. non-spatial factors to disease variance.
- Tested multiple adjacency matrix structures to evaluate the sensitivity of spatial dependency assumptions.
- Handled zero-inflated distributions and implemented Conditional Autoregressive (CAR) and Penalized Complexity (PC) priors to robustly model spatial autocorrelation.

Graduate Student — Sept 2019 — Sept 2020
Shahid Beheshti University of Medical Sciences — *Tehran, Iran*
- **Thesis: A Cure Rate Survival Model with Hyper-Poisson Frailty Distribution**
- Developed a novel cure rate survival model incorporating a Hyper-Poisson frailty distribution to model heterogeneity in patient data.
- Analyzed relapse times for Hodgkin lymphoma patients post-stem cell transplantation, identifying significant prognostic factors to guide treatment planning.

Teaching Experience

Instructor of Record — Aug 2024 — Dec 2024
Marquette University — *Milwaukee, WI*
- **Course: MATH 1700 - Modern Elementary Statistics**
- Full responsibility for curriculum delivery, lecture design, and assessment creation for undergraduate students.

Teaching Assistant — Jan 2023 — Present
Marquette University — *Milwaukee, WI*
- **Courses: Calculus I, Statistical Methods**
- Discussion Leader: Led discussion sessions for Calculus students, administered quizzes, and taught supplementary material to clarify challenging topics.
- Help Desk: Offering one-on-one and group consultations to guide students through problem-solving strategies.
- Assessment: Graded assignments and exams, providing detailed feedback to support student comprehension of course material.
- Conducted regular review sessions and tutorials to prepare students for midterms and finals.

Publications

- Yegani, T., **Mohseni, N.**, Dudda, M., Hardes, J., and Seitz, S. **2025**. Submitted. Accuracy of Digital Preoperative Planning in Total Hip Arthroplasty: Which Factors Influence the Planning Precision for Cementless Short Curved Stem Prostheses via the Direct Anterior Approach? The Journal of Arthroplasty.
- **Mohseni, N.**, Khadem Maboudi, A. A., Baghestani, A., Hajifathali, H., and Saeedi, A. **2021**. A cure rate survival model after stem cell transplantation for relapsed or refractory Hodgkin lymphoma patients. Middle East Journal of Cancer. https://doi.org/10.30476/MEJC.2021.88135.1461
- Saeedi, A., Baghestani, A., Hashemi-Nazari, S. S., Minoo, F., **Mohseni, N.**, and Esfahani, Z. **2020**. Prediction of mortality incidence in patients with chronic kidney Disease based on influential prognostic factors with competing risks Approach. Galen Medical Journal, 9: e1798. https://doi.org/10.31661/gmj.v9i0.1798
- **Mohseni, N.**, Khadem Maboudi, A. A., Baghestani, A., and Saeedi, A. **2020**. A cure rate model with discrete frailty on Hodgkin lymphoma patients after diagnosis. Archives of Advances in Biosciences. https://doi.org/10.22037/aab.v11i4.32576
- Looha, M. A., Masaebi, F., **Mohseni, N.**, Abedi, M., and Fakharian, A. **2020**. The Optimal Cut-off Score of the Nijmegen Questionnaire for Diagnosing Hyperventilation Syndrome Using a Bayesian Model in the Absence of a Gold Standard. Galen Medical Journal. https://doi.org/10.31661/gmj.v9i0.1738
- Masaebi, F., Looha, M. A., Rostami-Nejad, M., Pourhoseingholi, M. A., **Mohseni, N.**, Samasca, G., Lupan, I., Rezaei-Tavirani, M., and Zali, M. R. **2020**. The Predictive Value of Serum Cytokines for Distinguishing Celiac Disease from Non-Celiac Gluten Sensitivity and Healthy Subjects. Iranian Biomedical Journal. https://doi.org/10.29252/ibj.24.6.335
- Looha, M. A., Masaebi, F., **Mohseni, N.**, Nasiri, M., Kazeruni, F., and Zayeri, F. **2019**. Assessing the diagnostic power of Cystatin C and Creatinine in the detection of chronic kidney disease. Archives of Advances in Biosciences. https://doi.org/10.22037/aab.v10i3.25589

Professional Experience

Co-Founder Jun 2021 — Mar 2022

Maya-Stat

- Provided advanced statistical consulting to graduate and undergraduate researchers for thesis projects across diverse fields (psychology, engineering).
- Led data pre-processing, exploratory data analysis (EDA), model training, and results interpretation to ensure academic rigor.
- Applied advanced analytics to prioritize research activities and enhance the statistical validity of student projects.

Data Analyst May 2017 — Mar 2019

TezolMarket

- Implemented machine learning algorithms (Classification) to segment stores and optimize marketing strategies.
- Generated statistical reports to support business strategy and visualized results for executive decision-making.
- Conducted data cleaning and manipulation to translate analytic findings into actionable business changes.

Research And Development Specialist Oct 2016 — May 2017

Rahkar Andishan

- Analyzed data to enhance the performance and reliability of web services.
- Developed advertising strategies based on R&D analysis to support business development.

Skills

- **Statistical Modeling**: Bayesian Inference, Spatiotemporal Modeling, Survival Analysis, Linear/Nonlinear Regression.
- **Programming**: R (Advanced: `INLA`, `tidyverse`, `survival`), SQL, SPSS, Tableau, LaTeX.
- **Languages**: English, Persian.