AMELIA H. TRAN

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EDUCATION

University of Pennsylvania — Philadelphia, PA
M.S. in Biostatistics — Expected 2023

Mount Holyoke College — South Hadley, MA
B.A. in Statistics, Data Science, *Summa Cum Laude* — 2021

GRADUATE COURSEWORK

Probability, Methods and Data Analysis I, Interventional and Observational Studies, Inference (Spring 2022), Methods for Categorical and Survival Data (Spring 2022), Linear Models and Generalized Linear Models (Spring 2022)

PROFESSIONAL EXPERIENCE

University of Pennsylvania — Philadelphia, PA
Graduate Research Assistant — *Sept 2021 -*
Supervisor: Dr. Douglas Schaubel, Department of Biostatistics and Epidemiology
- Peruse literature in recent developments of novel statistical methodologies for time-to-event and longitudinal data in end-stage kidney and liver disease related studies
- Performed data cleaning, data description, and formal analysis to predict delayed graft function (DGF) and model time to graft failure after kidney transplantation

Institute for Pure and Applied Mathematics — Los Angeles, CA
Applied Maths Research Fellow — *June 2021 – Aug 2021*
Supervisors: Drs. Laurent White (AMD Research) and Kyung Ha (UCLA)
- Worked for Advanced Micro Devices (AMD) to develop physics-informed neural network models in Python using Keras and TensorFlow to simulate wave propagation
- Embedded physics constraints, i.e. PDEs of wave equation, into objective function
- Sampled unlabeled input values to reduce data acquisition cost in the training process
- Extrapolated in time for acoustic wave and in space from different source locations
- Communicated results through weekly meetings to industrial sponsor

Mount Holyoke College — South Hadley, MA
Undergraduate Research Assistant — *Sept 2020 – May 2021*
Supervisor: Dr. Marie Ozanne, Department of Mathematics and Statistics

- Incorporated the cirrhosis project into an honors project and wrote a 90+ page thesis
- Learned LASSO, ridge, and elastic net regularization for variable selection, and methods for competing risks, i.e. cause-specific and subdistribution hazards in survival analysis
- Modeled the progression of neglected tropical disease Canine Visceral Leishmaniasis
- Investigated the effects of lamb massage with Wilcoxon nonparametric tests
- Gained extensive experience in literature review and scientific writing

Memorial Sloan Kettering Cancer Center New York, NY
Biostatistics Research Fellow *June 2020 – Aug 2020*
Supervisor: Dr. Audrey Mauguen, Department of Epidemiology and Biostatistics

- Evaluated the association between biomarker bilirubin and survival in Primary Biliary Cirrhosis with Cox Proportional Hazards, Time-Dependent Cox and Joint Model
- Produced data visualizations with Kaplan-Meier survival curves and spaghetti plots
- Implemented algorithms in R to extract time interval endpoints and impute missing data
- Assessed proportionality assumption with Schoenfeld residuals and graphical visualizations
- Conducted sensitivity analysis and examined correlation structures to detect outliers

Mount Holyoke College South Hadley, MA
Undergraduate Research Assistant *June 2019 – May 2020*
Supervisor: Dr. Evan Ray, Department of Mathematics and Statistics

- Contributed to the *ncopula* package to calculate cumulative distribution function, probability density function, and log-likelihood to develop hierarchical Archimedean copulas
- Implemented S3 object-oriented programming in R to represent copula and perform MLE
- Included helper functions to transform the parameters within appropriate copula bounds
- Carried out comprehensive unit tests to examine the package functionality
- Gained extensive experience in R programming, and collaborative workflow on GitHub

AWARDS AND HONORS

Phi Beta Kappa Honor Society 2021
Theta Chapter of Massachusetts

Mu Sigma Rho Statistics Honor Society 2021
The Boston Chapter of the American Statistical Association

Five College Statistics Prize 2021
Five College Statistics Program

Mary Lyon Scholar 2021
Mount Holyoke College

Global Competence Award 2021
McCulloch Center for Global Initiatives, Mount Holyoke College

Electronic Undergraduate Statistics Research Best Virtual Video Presentation 2020
The Consortium for the Advancement of Undergraduate Statistics Education and the American Statistical Association

George W. Cobb Statistics Prize for Excellence in Statistics 2020
Department of Mathematics and Statistics, Mount Holyoke College

Lynk Universal Application Fellowship for Qualified Research Position 2019
Mount Holyoke College

Paul Saintonge Prize for Superior Achievement in French 2019
French Department, Mount Holyoke College

Sylvia Sherk Hubbell Class of 1939 Book Prize for Excellence in French 2018
French Department, Mount Holyoke College

Sylvia Sherk Hubbell Class of 1939 Summer Scholarship 2018
French Department, Mount Holyoke College

PUBLICATIONS

* indicating equal contribution

Davini D*, Samineni B*, Thomas B*, **Tran AH***, Zhu C*, Ha K, Dasika G, White L. "Using physics-informed regularization to improve extrapolation capabilities of neural networks". Presented at the *35th Conference on Neural Information Processing Systems (NeurIPS) workshop on Machine Learning and Physical Sciences*, 2021

Tran AH, Ozanne, MV. "Statistical Analysis of the Association between Bilirubin and Survival in Primary Biliary Cirrhosis". *Mount Holyoke College Mathematics and Statistics Department Senior Thesis*, 2021

ORAL PRESENTATIONS

* indicating equal contribution

Davini D*, Samineni B*, Thomas B*, **Tran AH***, Zhu C*, Ha K, White L. "Accelerating Scientific Applications with Deep Neural Networks", *Research in Industrial Projects for Students (RIPS) Research Symposium*, Institute for Pure and Applied Mathematics, University of California, Los Angeles, CA, August 2021

Davini D*, Samineni B*, Thomas B*, **Tran AH***, Zhu C*, Ha K, White L. "Accelerating Scientific Applications with Deep Neural Networks", *RIPS-IPAM Site Visit Student Presentation*, Advanced Micro Devices Inc., Santa Clara, CA, August 2021

Tran AH, Ozanne MV. "Statistical Analysis of the Association between Bilirubin and Survival in Primary Biliary Cirrhosis", *Honors Thesis Defense*, Department of Mathematics and Statistics, Mount Holyoke College, South Hadley, MA, May 2021

Tran AH, Ozanne MV. "Statistical Analysis of the Association between Bilirubin and Survival in Primary Biliary Cirrhosis", *Mount Holyoke College Senior Symposium*, South Hadley, MA, April 2021

Tran AH, Mauguen A. "Statistical Analysis of the Association between Bilirubin and Survival in Primary Biliary Cirrhosis", *Electronic Undergraduate Statistics Research Conference (eUSR)*, The Consortium for the Advancement of Undergraduate Statistics Education (CAUSE) and the American Statistical Association (ASA), November 2020

Tran AH, Mauguen A. "Statistical Analysis of the Association between Bilirubin and Survival in Primary Biliary Cirrhosis", *Mount Holyoke College Learning through Application: LEAP Symposium*, South Hadley, MA, October 2020

Tran AH, Mauguen A. "Statistical Analysis of the Association between Bilirubin and Survival in Primary Biliary Cirrhosis", *Quantitative Sciences Undergraduate Research Experience (QSURE) Summer Research Symposium*, Department of Epidemiology and Biostatistics, Memorial Sloan Kettering Cancer Center, New York, NY, August 2020

POSTER PRESENTATIONS

* indicating equal contribution

Davini D*, Samineni B*, Thomas B*, **Tran AH***, Zhu C*, Ha K, White L. "Using physics-informed regularization to improve extrapolation capabilities of neural networks", *Joint Mathematics Meetings*, Seattle, WA, January 2022

TEACHING EXPERIENCE

Mount Holyoke College

Teaching Assistant, STAT 343: Mathematical Statistics	Spring 2021
Teaching Assistant, COMSC 312: Algorithms	Spring 2021
Teaching Assistant, STAT 242: Intermediate Statistics	Spring 2020
Teaching Assistant, COMSC 205: Data Structures	Fall 2019
Teaching Assistant, MATH 101: Single Variable Calculus	Spring 2019

PROFESSIONAL SERVICE

Student Liaison, Department of Mathematics and Statistics — 2020 – 2021
Mount Holyoke College

Co-President, French Club — 2020 – 2021
Mount Holyoke College

Board Member, HackHolyoke (24-hour hackathon) — 2020
Mount Holyoke College

PROFESSIONAL MEMBERSHIPS

American Statistical Association (ASA)
Association for Women in Mathematics (AWM)
International Biometric Society Eastern North American Region (ENAR)

TECHNICAL SKILLS

Statistical Software: R, Stata, SAS, SPSS
Computing : Python, Java, SQL
Technologies : Eclipse, Git, LaTeX, Jupyter Notebook