MABEL QIANQIAN YAO

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EXPECTED POSITION & CAREER

Data Scientist/ Machine Learning Engineer/ Faculty Track

EDUCATION & TRAINING

North Dakota State University, Fargo, US *2024-2026*
Doctor of Philosophy in Statistics GPA: 4.0/4.0
Concentration: Machine Learning, Data Science, Representation Learning, Graphs

North Dakota State University, Fargo, US *2022-2026*
Doctor of Philosophy in Computer Science GPA: 4.0/4.0
Concentration: Machine Learning, Data Science, Representation Learning, Graphs

North Dakota State University, Fargo, US *2019-2022*
Master of Science in Computer Science GPA: 4.0/4.0
Concentration: Machine Learning, Data Science, Representation Learning, Graphs

Tohoku University, Sendai, JP *2013-2016*
Master of Science in Architectural and Building Science GPA: 3.68/4.0
Concentration: Seismic Evaluation & Damage Assessment, Structural Engineering

University of California, DAVIS, US *2/2015-3/2015*
Cooperative Laboratory Study Program (training)
Academic English Program for Science and Technology
Concentration: Structural Engineering

Dalian Jiaotong University, Dalian, CN *2009-2013*
Bachelor of Engineering in Civil Engineering & Software Engineering (double majors) GPA: 87/100
Concentration: Building Structural Design, Software Development

INTEREST & SKILL

Machine Learning, Statistics, Data Science, Embedding/Representation Learning, Graphs
Molecule Representations, Molecular Property Prediction, Cheminformatics, Bioinformatics, Medicinal Chemistry/ Biochemistry/ Quantum Chemistry, Drug Discovery, Applied Sciences, etc.
FinTech/Quant/Econometrics; Climate Tech/Climate Change, Catalyst Discovery;
Time Series, Outlier Analysis, Risk Analysis, Survival Analysis, Multivariate Analysis, Experimental Design, etc.

Programming Languages
Often Used: Python, R, SAS, Latex, etc.
Scientific Computing: Julia, Matlab, Octave, etc.
Computer Science: Java, SQL, HTML/CSS/JavaSript, Git, Anaconda, etc.

ONGOING RESEARCH

Molecular Data Science in Drug Discovery & Precision Medicine
Chemometrics, Molecular Profiling,
Feature Selection & Feature Extraction,
Molecular Property Prediction,
Descriptor based Statistical Modeling, Sequential Modeling, Graph Modeling,
Drug discovery, Gene Expression, Precision Medicine,
Graph-Level Representation Learning for Chemical Screening.

Catalyst Discovery/ Material Discoveries.
Graph Embedding for Adverse Drug Reaction Detection
Knowledge Graph Embedding, Drug-Drug Interaction Network.
Adverse Drug Reaction in Clinical Trials in Drug Discovery.
Graph Neural Networks
How algorithms learn?
Frameworks of graph neural networks
Outlier Analysis & Anomaly Detection
Time Series Data, Multivariate Data.
Anomaly Detection in Financial Fraud.
Recommendation Systems
Recommendation in e-commerce,
Statistical methods, machine learning, deep learning, graph neural networks

RELATED COURSE PROJECT & RESEARCH PROJECT

Molecular Data Science, Drug Discovery & Precision Medicine	*2024*
Time Series Forecasting for Electricity Usage, R	*Spring*
Survival Prediction in Colorectal Cancer, R	
Feature Extraction for Molecular Profiling in Precision Oncology Analysis	
Feature Extraction in Raman Spectrum for Oncology Diagnosis and Staging	
Molecule Representations, Multivariate Analysis, Outlier Analysis	*2023*
Multivariate Analysis for Discrimination of Carcinogenesis Staging, SAS	*Fall*
Detection and Evaluation of Outliers by Linear Models, R	
Molecule Representation Learning for Virtual Screening in Drug Discovery, python	*Spring*
Descriptor based multiple linear regression model for molecule property prediction, python	
Graph Representation Learning, Molecule Representation Learning	*2022*
Knowledge graph embedding for adverse drug reaction detection	*Fall*
Comparison of Non-Learned and Learned Molecule Representations for Catalyst Discovery	*Spring*
Statistical Methods for Recommender System, python	
Graph Representation Learning, Molecule Representation Learning	*2021*
Molecular Representation Learning for Catalyst Discovery, python	*Fall*
Graph Representation Learning: a survey on graph convolutional neural network, python	*Spring*
Computer Vision, Natural Language Processing	*2020*
Natural Language Processing: text classification, python	*Fall*
Natural language Processing: chatbot as virtual assistant, python	
Distributed database built on client-server architecture, java	*Spring*
Multi-label classification based on image similarity, python	
Network Mining, Deep Learning, Recommendation	*2019*
Implementation of recommender system based on different models, python	*Fall*
Implementation of expert system for real estate recommnendation by drools, java	
Large scale study of programming languages and code quality in github, python	*Spring*
Network Mining and analysis using deepwalk, line, and node2vec, python	
Evaluaitoion of real estate market using deep learning, python	

PUBLICATION

Google Scholar: https://scholar.google.com/citations?user=S7k_gdkAAAAJ&hl=en

CERTIFICATE

Verified Courses
IBM Data Science Specialization, Coursera   *May, 2023*
https://www.coursera.org/account/accomplishments/professional-cert/NJ2PYKM3KYDU

Machine Learning, Coursera   *May, 2023*
https://www.coursera.org/account/accomplishments/certificate/HSNF9PYJVDUW
Deep Learning Specialization, Coursera   *March, 2021*
https://www.coursera.org/account/accomplishments/specialization/certificate/FFBNKVM82AXS
Unverified Courses
HarvardX MCB63X: Principles of Biochemistry, edX   *Spring, 2024*
https://www.edx.org/learn/biochemistry/harvard-university-principles-of-biochemistry
UTokyoX: Basic Analytical Chemistry, edX   *Spring, 2024*
https://www.edx.org/learn/chemistry/the-university-of-tokyo-basic-analytical-chemistry
DavidsonX: Drug Discovery & Medicinal Chemistry, edX   *Spring, 2023*
https://www.edx.org/learn/drugs/davidson-college-drug-discovery-medicinal-chemistry

WORK EXPERIENCE

Teaching Assistant, North Dakota State University   *Fargo, US*
Department of Statistics   *2024-2026*
stat725 Applied Statistics
stat726 Applied Regression and Analysis of Variance
Department of Computer Science   *2019-2023*
csci160 Computer Science I
csci161 Computer Science II
Laboratory Assistant, North Dakota State University   *Fargo, US*
Department of Plant Science   *2019-2023*
(2019fall, 2020spring, 2020summer, 2022summer, 2023summer)
Experimental Design (seeding, planting, harvesting, data collection and entry)
Data Analysis
Structural Engineer   *Shenzhen, CN*
Shenzhen Yuanlizhu Engineering Consultants Co.,Ltd   *2017-2019*
using computer aided engineering tools to design and analyze building structure,
communicate with clients including investors, constructors, designers to optimize the structural design.
Project Assistant   *Shanghai, CN*
Shanghai Saiyo Construction Technology Co.,Ltd   *2016-2017*
Participated in a Japanese project of Shopping Mall Construction in Ningbo, and applied Building Information Modeling (BIM) to construct a virtual model of the building for design and clash detection;
also took the role of translator between Japanese and Chinese during the meetings.
Intern   *Sendai, JP*
Yamashita Sekkei INC. Tohoku Branch   *9/2015-10/2015*
Analyze structures with SNAP, created building model, considered seismic isolators and seismic-control devices, analyzed seismic-response controlled structure and seismic-isolation structure to get seismic performance, created animation;
Drew construction drawings with AutoCAD.

ACTIVITY IN UNIVERSITIES

Membership in Student Union, Sports Department, Dalian Jiaotong University   *2009-2013*
organized and participated in sports activities on campus annually;
Project of Doctoral Degree Program on Science for global safety
Inter-Graduate School program, Tohoku University   *2014-2016*
Finished all corresponding curriculum including C-lab training of specialized seminar of science for natural disasters, Multi-disciplinary and Specialized Basic Subjects about natural disaster generation mechanism, and fundamental subjects of philosophy and sociology;
Activities with other Universities about natural disasters;
Concentrated lectures about development of human culture;

English skill training;

Membership in NDSU Graduate School , North Dakota State University _2019-2026_

Graduate School supports graduate students, graduate faculty, and graduate programs of all NDSU Colleges; Grad School is also the academic home for several interdisciplinary graduate programs;

Membership in Center for Writers , North Dakota State University _2023-2026_

supporting graduate students, as well as faculty and staff, to become more successful writers;

Membership in Graduate Student Council , North Dakota State University _2024-2026_

advocating for graduate students' well-being and contributing to a welcoming environment;

hosting activities including orientations, game night, monthly open forums;

supporting delivery of Student Research Day, and representing graduate students on Graduate Council;

Writing Camp , North Dakota State University _2024 Spring_

14 Days Writing Challenge program, writing on course project, grant, etc.

MHFA Training , North Dakota State University _2024 Spring_

2-hour self-paced online course and a 4.5 hour in-person Skills Application instructor-led session;

MHFA certification;