TSZ YAU IRIS CHOW

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SUMMARY

Quantitative Analyst with a strong foundation in biostatistics, statistical modeling, and machine learning. Experienced in designing and analyzing studies integrating phenotypic, environmental, and genomic data. Proficient in R, Python, SQL, and data visualization, with hands-on experience in developing and implementing statistical methods for complex datasets. Passionate about applying data-driven approaches to identify genetic risk variants and advance understanding in human diseases.

EDUCATION

University of Illinois Urbana-Champaign ***August 2022 - June 2025***
Master of Science in Bioinformatics, Crop Sciences Concentration GPA: 3.9/4.0
Thesis: Computational Corn Hybrid Selection Integrating Phenotypic, Environmental, And Genomic Information

Research Interests: Machine Learning and Statistical Modeling in Agriculture and Public Health, Bayesian Statistics, Environmental Statistics

University of Wisconsin - Madison ***August 2019 - May 2022***
Bachelor of Science, Statistics GPA: 3.7/4.0
Relevant coursework: Statistical Experimental Design, Applied Regression Analysis

The Pennsylvania State University - University Park ***June 2018 - August 2019***
Bachelor of Science, Statistics, Actuarial Option GPA: 3.5/4.0
Relevant coursework: Data Science through Statistical Reasoning and Computation

RESEARCH EXPERIENCE

Crop Science Department at University of Illinois Urbana-Champaign **Urbana, Illinois**
Research Assistant with Professor Nicolas Martin **August 2022 - June 2025**

- Thesis: Computational Corn Hybrid Selection Integrating Phenotypic, Environmental, And Genomic Information
  - Designed statistical models using large-scale phenotypic and environmental datasets, including random forest and simulation-based predictors—demonstrating capacity to manage, analyze, and draw insights from complex real-world data applicable to public health settings
  - Developed skills relevant to public health modeling, such as variable selection, prediction under uncertainty, and model validation, which are applicable to health surveillance and outcomes research
  - Fit random forest model to Genomes-to-Field dataset and ran APSIM to obtain maturity information for more precise corn yield prediction and to gain a deeper understanding of Genotype×Environment interactions
  - Used seasonal weather and soil characteristics to describe the environment. Proposed the use of environmental variables generated by crop simulations. Selected significant variables and patterns using heatmap and PCA to address new hybrid prediction

TEACHING EXPERIENCE

Teaching Assistant for Spatial Analytics (CPSC 444) **Urbana, Illinois**
Teaching Assistant **August 2024 - May 2025**

- **Level**: Graduate and Undergraduate
- **Duties**: Provided feedback on code output and knowledge gaps, graded assignments, refined teaching materials, gave advice on how to complete a statistical final project for class

Teaching Assistant for Introduction to Applied Statistics (CPSC 241) **Urbana, Illinois**
Teaching Assistant **January 2024 - May 2024**

- **Level**: Undergraduate
- **Duties**: Designed and delivered coding examples in R to explain statistical concepts such as confidence intervals and ANOVA, provided hands-on coding support to students, and graded assignments

COMPETITION EXPERIENCE

AgTech Hackathon **Champaign, Illinois**
Winner **October 2023**

- Showcased scalability of a computational regression model that predicts phenotypic traits of hybrid progeny in corn
- Evaluated which line of corn has the highest yield based on plant height and moisture using the least absolute shrinkage and selection operator (LASSO) that performs both variable selection and regularization to enhance the prediction accuracy to 80%

CAII 2024 Ashby Hackathon **National Center for Supercomputing Applications**
Participant **October 2023 - December 2023**

- Utilized Large Language Models (LLMs) to address complex computational science and machine learning challenges with cutting-edge computational systems
- Acquired proficiency in LLMs for workflow generation and execution, alongside employing machine learning, information visualization, and various computational methodologies

Illinois Statistics Datathon **Champaign, Illinois**
Participant **March 2024**

- Analyzing the relations between call attributes and customer call reasons within the IVR (Interactive Voice Response) system with an emphasis on calls that the IVR could not handle (i.e., floor calls)
- Used conditional probability and Bayesian methods to predict the probability in getting a floor call

NFT Competition **Madison, Wisconsin**
Winner **June 2022 - August 2022**

- Selected variables to predict the final price of Non-Fungible Token(NFT).
- Built an interactive dashboard webpage using RShiny to visualize different variables and observe the relationship with the final selling price
- Utilized Python to fit machine learning models to predict the final prices of digital products based on variables including auction type, last sale final price, favorites, duration

UChicago Midwest Trading Competition **Madison, Wisconsin**
Competitor **October 2019**

- Tackled 3 cases about finance, learned how to solve problems by an innovative entrepreneurial mindset
- Gained interests on financial concepts, such as stock exchange, depreciation of goods and time value

University of Wisconsin-Madison: MadHacks-Hackathon **Madison, Wisconsin**
Competitor **October 2019**

- Attended tech talk about SQL and MongoDB to learn transitions between the two languages
- Created website to predict movie preferences using a dataset that contains 500 data points; utilized tidyverse to clean and prep data.

University of Wisconsin-Madison: UW Data Challenge **Madison, Wisconsin**
Competitor **September 2019**

- Built linear regression model in R to predict revenue for 200 movies, gain statistics, analytical skills
- Won Best Written Report award for writing comprehensive reports based on analysis

RELATED PROJECTS

UIUC iSchool Courses Information Hub **Urbana, Illinois**
Course Review Platform Developer — Team Project, University of Illinois Urbana-Champaign

- Designed and developed a centralized platform enabling iSchool students to share anonymized course reviews, aiding peers in informed course selection and expectation setting
- Implemented secure user authentication, review moderation tools, and university email verification to ensure data integrity and privacy
- Built dynamic features for adding, editing, deleting, and filtering reviews by course, instructor, tags, and difficulty level
- Integrated structured relational tables (Courses, Users, Reviews, Instructors, Tags) to support robust data storage and querying
- Applied data analytics techniques to assess course quality, workload, and satisfaction trends, supporting curriculum improvement efforts
- Ensured responsive design for accessibility across devices and incorporated regular data backups for redundancy and recovery

Investigating the Relationship Between Temperature and Precipitation Dane County, Wisconsin
Project Member *September 2021 – December 2021*

- Analyzed five years of weather data from Dane County to study the relationship between temperature and probability of precipitation
- Built a Bayesian logistic regression model in R to estimate monthly precipitation likelihood using temperature as the predictor
- Defined informative priors and used posterior distributions to quantify the uncertainty of temperature effects on precipitation
- Visualized model predictions and monthly trends to assess predictive validity and seasonal dependencies

POSTER AND PRESENTATIONS

UIUC Graduate Student Presentation **Champaign, Illinois**
Presenter **November 2024**

- Delivered a seminar presentation to students and faculty in the Crop Sciences Department, providing a comprehensive overview of my thesis project and its objectives

UIUC Crop Science Symposium **Champaign, Illinois**
Presenter **August 2024**

- Presented a poster on my thesis project and received positive feedback from UIUC faculty and students

B4U Mentoring Event **Chesterfield, Missouri**
Presenter **October 2024**

- Presented a poster on my thesis project at Bayer, a leading biotechnology company, receiving constructive feedback from industry experts

UIUC Crop Science Symposium **Champaign, Illinois**
Presenter **August 2023**

- Presented a poster on my thesis project, gaining valuable insights and positive feedback from faculty and peers at UIUC

EXTRACURRICULAR ACTIVITIES

Corn Seed Production Site at Bayer Tour **Champaign, Illinois**
Member **October 2024**

- Toured the state-of-the-art facility at Bayer to learned about the corn seed production process and learn about what farmers value in corn

Beyond the R1 at Parkland College **Champaign, Illinois**
Member **June 2024 - Present**

- Gained teaching experience by giving a guest lecture, exchange ideas with tenure-track faculty and lecturer mentors at Parkland College

B4U Mentorship Program **Champaign, Illinois**
Member **June 2024 - Present**

- Received one-on-one career advice from industry scientist to generate professional development goals for career development

Statistics Club **Madison, Wisconsin**
Member **October 2019 - Present**

- Attended workshop for Python, joined club-organised social events, building network while expanding knowledge for the statistical industry

Actuarial Science Club **Madison, Wisconsin**
Member **October 2019 - Present**

- Participated in different company's presentations and social events. Learnt about how to build network with recruiters
- Engaged in career fair organised by the club. Talked to experts in the field to understand the statistical industry

LEADERSHIP EXPERIENCE

UIUC Corteva Agriscience Symposium Organizing Committee **Champaign, Illinois**
Organizer **October 2018 - August 2019**

- Developed skills for leveraging technology and media for organization and project management
- Help with logistics of the research meeting such as generating funding, inviting speakers, planning itinerary

TECHNICAL STRENGTHS

- Data Analysis & Statistics
  - Regression, ANOVA, LASSO, Bayesian modeling, PCA, time series
- Programming & Tools
  - R (dplyr, ggplot2, shiny), Python (pandas, scikit-learn), SQL
  - SAS (learning), Excel, Tableau
- Soft Skills
  - Cross-disciplinary collaboration, communication of technical findings, teaching & mentoring