

Zhuobing Du

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EDUCATION

Washington University in St. Louis

Master of Science in Data Analytics & Statistics (STEM) GPA: 3.91/4.0 01/2021-12/2023

Master of Science in Computer Science (STEM) GPA: 3.91/4.0 01/2022-12/2023

Graduate Certificate in Data Mining and Machine Learning 01/2022-05/2023

Further courses with certificate: Machine learning, Advanced Algorithms, Data Mining, Mathematical Statistics.

Taiyuan University of Technology

Bachelor of Science in Mathematics and Applied Mathematics Taiyuan, China 09/2016-07/2020

TECHNICAL SKILLS

- Packages: NumPy, Pandas, SciPy, Scikit-Learn, Matplotlib.
- Languages: Mandarin, English (GRE: Verbal: 162/90%, Quantitative: 170/96%).
- Computer Frameworks & Languages: Python, Java, C, SQL, Linux, HTML/CSS, JavaScript, PHP, R, MATLAB, AWS, VS Code, PyCharm, Git, Tableau, Excel, Word, PowerPoint.
- Statistics: Hypothesis testing (T-test, F-test, Chi-square test), A/B testing, Time Series, ANOVA, Bayesian Statistics.
- Machine Learning: Logistic Regression, Random Forest, KNN, Gaussian Process, SVM, Neural Network.

PROJECTS & COMPETITIONS EXPERIENCE

News Website (HTML&SQL)

02/2023

- Built a News web site using PHP and HTML. Teamwork
- Used Apache on the EC2 Amazon Web services.
- Enhanced password security by using MySQL database with hashing and salt.
- Enhanced Web security by using CSRF token and filtering Input and Output.

Synthetic Image Denoising (Python)

12/2022

- Denoised synthetic images for signal detection task using CNN approach. Teamwork
- Discretized the object function by pixel expansion.
- Applied SVD decomposition on the image system and got reconstruction of image by Pseudo-Inverse.
- Trained and tuned model by CNN network for and performed AUC and MSE evaluation.
- Got 46% improvement in Area Under the Roc Curve at very high Poisson noise level.

Study of the effect of Nike Vaporfly Shoes (R)

05/2022

- Used data sample of 1600 elite athletes over the period 2015 to 2019 to analyze the effect of Vaporfly shoes.
- Calculated log marginal likelihood by MCMC sampling and performed Bayesian linear model selection using Bayes factor.
- Estimated the Vaporfly shoes effect through posterior mean.
- Estimated that Vaporfly Shoes has a 5% more time reduction on men on average.

Model Building for Robot Control Kaggle (Python)

04/2022

- Predicted robot action using 8250 data samples containing 40 features that described the status of robot. Teamwork
- Arranged to teamwork by holding virtual meetings and explaining algorithms and Statistics to Teammate.
- Applied normalization on data and performed feature selection by Principal Component Analysis.
- Trained the model using Multilayer Perception combined with Random-Search for initial prediction and applied k cross-validation.
- In course Kaggle competition, led team gain TOP 1.

EXPERIENCE

Graduate Student Senate *Senator of Computer Science & Engineering*

11/2022-02/2023

- Assisted in organizing signature events for graduate students to benefit students.
- Weekly meeting to discuss graduate student needs including university shuttle transportation, Apartment renting, etc.

Associate Instructor *AI of Probability and Stochastic Processes*

02/2022-05/2022

- Held office hour weekly to solve problems of students and illustrate probability concept and basic measure theory.

China Mobile Communications Group Chongqing Co., LTD *Part-time Assistant in the Finance Department*

02/2018-03/2018

- Participated in processing user data and analyzing user behaviors.
- Assisted auditors in conducting business risk audit through big data analysis systems.
- Took advantage of the opportunity for ERP system upgrade to learn the structure and functions of the system and help financial personnel with data reset.