Bucky Badger

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EDUCATION

College of Letters & Science, University of Wisconsin-Madison **Madison, WI**
Bachelor of Science in Applied Mathematics and Statistics *09/2018 – 05/2022 (Expected)*
- GPA: 3.90/4.0
- Honor: Dean's List for five consecutive semesters
- Relevant Coursework: Calculus—Functions of Several Variables, R for Statistics, Techniques in Ordinary Differential Equations, Elementary Matrix and Linear Algebra, Applied Regression Analysis, Introduction to Machine Learning and Statistical Pattern Classification, Introduction to Stochastic Processes, Mathematical Methods in Data Science

PROFESSIONAL EXPERIENCE

Cheeseland Information Technology Co., Ltd. **Green Bay, WI**
Data Analysis Intern, Department of Algorithms *05/2021 – 07/2021*
- Used Python to optimize prediction algorithms for electricity consumption in the Wisconsin area
- Created training and test sets according to the accepted proportions after processing outliers; processed weather data (wind, precipitation, etc.) and electricity consumption data of Wisconsin as one point per hour
- Built a multiple regression algorithm by utilizing the functions StandardScaler, PolynomialFeatures, and Linear Regression in Pipeline
- Developed a time series algorithm by filling in the discontinuity of the energy consumption value data in time by inserting the mean value and applying the ARIMA model
- Presented results to employees; code was adopted for company's backup

RESEARCH EXPERIENCE

Comparing Machine Learning Methods in News Classification **10/2021 – 12/2021**
- Aimed to design new classification models with a high predictive rate and validity using the "News Category Dataset" from the Kaggle website
- Applied Bag of Words and TF-IDF for feature extraction after data preprocessing
- Built algorithms using Python package including Scikit-learn, NumPy, Pandas, and NLTK
- Evaluated and compared the models by utilizing a validation dataset based on accuracy, precision, recall, and F-score

Effect of Different Beverages on Time for College Students to Fall Asleep **10/2021 – 12/2021**
- Intended to help students with sleep disorders adjust their work and rest times to a normal schedule
- Recorded differences in time to fall asleep as measured by an Apple Watch after drinking different beverages including Coke, coffee, Red Bull, and milk
- Applied the randomized complete block design model to test for an effect of different beverages on the time to fall asleep by blocking variations between participants' physical conditions
- Evaluated model adequacy by checking the assumptions of linearity, homoscedasticity, additivity, and normality

Impact of Online Courses on Sleeping and Working Hours **04/2020 – 05/2020**
- Collected information about sleep and working hours before and after the implementation of online courses, course load, living situation, work status, and job position to analyze whether online courses have an impact on sleeping and working hours
- Used RStudio to read data from Excel and perform a paired t-test to test for an impact of online courses on sleeping or working hours
- Applied the chi-square test to test the null hypothesis of no change in sleeping and working hours
- Concluded that there was a change in sleeping hours, but not working hours, and that the changes were independent

EXTRACURRICULAR & VOLUNTEER ACTIVITIES

International, Teaching Assistant	**Tokyo, Japan**	**07/2019 – 08/2019**
Habitat for Humanity, Volunteer	**Dane County, Madison**	**08/2017**

SKILLS & INTERESTS

Language: Mandarin (conversational), English (fluent), Spanish (advanced)
Computer: Java, R, Python (NumPy, Scikit-learn, Matplotlib, SciPy, Pandas, StatsModels)
Interests: Flute, Table Tennis