Zheng Zhang

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Education

2021 - PRESENT PhD (Computer Science) at **Auburn University** (GPA: 3.8/4.0)
2016 - 2018 M.S. (Computer Science) at **Auburn University** (GPA: 3.7/4.0)

Projects

Network Intrusion Detection System 08/2022 - PRESENT Github

– Proposed heterogeneous ensemble deep architectures for network intrusion detection. XGBoost Transformer CNN
– The optimized ensemble model reports **SOTA results** on various network intrusion detection datasets.

An Inference Architecture for Drivers' Status Estimation in L3 Driving Mode 05/2018 - 08/2019 Github

– Led the development of three interconnected models - Behavior Model, Inference Model, and Cognition Model, to ensemble a deep learning-based architecture for estimating drivers' status in automated driving mode. Python VGG LSTM

End-to-end Neural-Symbolic Reinforcement Learning 09/2019 - 09/2022 Project, Github

– Established a Neural-Symbolic Reinforcement Learning model built on CaptionGAN, differentiable inductive logic programming, and policy gradient. Python Prolog CaptionGAN ∂ILP Reinforcement Learning Explainable AI

Auburn PAIR program 08/2018 - 12/2018 Project, Github

– Data analysis for the prototype framework of climate services for decision making. Pandas Numpy Sklearn netCDF4

Experience

Graduate Research Assistant - Auburn University 04/2018 - 12/2018, 08/2021 - 05/2022

– TIDES: Trustworthy Interactive DEcision-making Using Symbolic Planning. Link
– Drivers' status estimation in automated driving mode. South Korea Electronics and Telecommunications Research Institute (ETRI) Research Grant - 18TLRP-B131486-02.
– Auburn PAIR program - A Prototype Framework of Climate Services for Decision Making. Link

Graduate Teaching Assistant - Auburn University 01/2022 - PRESENT

– Introduction to Algorithms (COMP3270), Fundamentals of Computing - Java (COMP1210): proficiently instructed 75 students in class each semester through concise lectures, interactive discussions, practical exercises, and assessments.

Web Designer - Inner Mongolia Irrigation Center, China 2018 - 2021

frontend and backend websites design, data maintenance and regular updates. HTML CSS JavaScript PHP Node.js

Publication

Zhang, Z., Das, A., Rahgouy, M., Bao, Y., &, Baskiyar, S. (2023). Multi-Label Classification of CS Papers Using Natural Language Processing Models. International Conference on Machine Learning and Applications. (acceptance rate: ∼25%).
Zhang, Z., Xu, L., Bao, Y., & Baskiyar, S. (2023). In Towards the Diagnosis of Heart Disease Using an Ensemble Learning Approach. International Conference on Machine Learning and Applications. (acceptance rate: ∼25%).
Zhang, Z., Yilmaz, L., & Liu, B. (2023). A Critical Review of Inductive Logic Programming Techniques for Explainable AI. IEEE Transactions on Neural Networks and Learning Systems. (Impact factor: 10.5).
Das, A., Rahgouy, M., **Zhang, Z.**, Bhattacharya, T., Dozier, G., & Seals, C. (2023). Online Sexism Detection and Classification by Injecting User Gender Information. In The IEEE International Conference on Artificial Intelligence, Blockchain, and Internet of Things.
Cui, Y., Liu, H., Ming, Y., **Zhang, Z.**, Liu, L., & Liu, R. (2023). Prediction of strand-specific and cell-type-specific G-quadruplexes based on high-resolution CUT&Tag data. Briefings in Functional Genomics. (Impact factor: 4.8).

Certifications

Applications of AI for Anomaly Detection | Nvidia GAN XGBoost Autoencoder
Deep Learning Specialization | Coursera Deep Learning Hyperparameter Optimization CNN Sequence Models

Skills

Skills: Python, Java, JavaScript, C, and R **Deep Learning framework:** Pytorch, Tensorflow, Fastai, Huggingface
Python Library: Numpy, Pandas, NLTK, Scikit-learn, SciPy, Statsmodels, OpenCV, Matplotlib, Seaborn, Flask, Django.