Yingqian Qi

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EDUCATION

Beihang University Beijing, China
MS, Safety Science Engineering *Sep. 2020 – Jan. 2023*

University of Science and Technology Beijing Beijing, China
BE, Safety Engineering; GPA: 3.62/4, Ranking: 4/62 *Sep. 2016 – Jun. 2020*

SKILLS AND AWARDS

Programming Languages: Python, MATLAB, C++, Linux

Frameworks and Libraries: Keras, Pytorch, Tensorflow

Awards: National Scholarship(2019), National Inspiration Scholarship(2017, 2018)

PUBLICATION

Adaptive vibration control of a flexible structure based on hybrid learning controlled active mass damping SCI, Accepted, 2022
earthquake, high-rise buildings, vibration control

- **A novel finite-dimensional dynamic model** is constructed, which helps to better understand the dynamic properties of flexible building structures.
- An **adaptive hybrid learning control strategy** is proposed to effectively suppress the vibration caused by unknown time-varying disturbances in flexible building structures.
- The semi-global consistent boundedness of the closed-loop system is guaranteed, which provides new ideas and methods for disaster mitigation in engineering practice.

Fault diagnosis for gearbox based on improved CNN and selective ensemble learning SCI, Under review, 2023
Fault diagnosis, Improved CNN, Ensemble learning

- Proposed an **improved CNN model** to extract the features of gearbox vibration signals more effectively.
- Used **spectral clustering method** to realize basic learner pruning, and the classifiers nearest to each cluster center are selected as the individual learners of the ensemble method.
- Integrated the selected learners based on the **DSmT theory** to obtain the diagnosis results.

PROJECT EXPERIENCE

Fault prediction and health management system application technology research Beijing, China
Engineering requirements *Jul. 2021 – Nov. 2021*

- Built more than 10 intelligent algorithm models(e.g., CNN, SVM, PNN) using **Tensorflow** for key air-to-air missile parameters, covering the entire process from **data pre-processing** to evaluation, and tested and validated using key performance indicators measured parameters.
- Interfaced with software developers and work together to complete the development of typical component condition assessment and prediction software after six consultation meetings.

Equipment launch test qualification support system Beijing, China
Platform Development *Sep. 2020 – Apr. 2021*

- Development of an equipment test and qualification support system with condition monitoring, performance evaluation and trend prediction functions.
- Core technology leader of the trend prediction subsystem, using Python to build trend prediction models based on machine learning algorithms such as SAE and SLTM; carry out trend prediction for cyclical data, control signal data, etc.

WORK EXPERIENCE

Hirain Technology Co. Beijing, China
Cybersecurity Engineer *May. 2023 – Now*

- **Security Vulnerability Analysis and Repair:** Responsible for analyzing and repairing security vulnerabilities in automotive systems, including identifying and resolving vulnerabilities in software and hardware.
- **Threat Modeling and Prevention:** Responsible for modeling and preventing various threats that the automotive system may face, including prevention and early warning of remote attacks, physical attacks, and network attacks.
- **Automotive Systems Security Assessment:** Responsible for conducting security assessments of automotive systems, including reviewing and testing the security of on-board Electronic Control Units (ECUs) and other critical systems.