Wenxing Deng

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Education

- **Beijing University of Technology, Faculty of Information Technology** Beijing, China
  Bachelor of Engineering in Automation *Sept. 2017 - July 2021*
  GPA: 3.88/4.0 (Rank: 3/81)
  Courses: Fundamentals of Computer Software, Embedded Systems, Automatic Control Principle, Principal and Applications of Microcomputer, Computer Simulation of Controlled Systems
  Coursera Courses: Data Structures, Operating Systems, Discrete Mathematics Generality , IBM Data Science

Publications

[1] Xuan Wu, **Wenxing Deng**, Chang Lu, Peiqi Wei, Yizheng Zhao, and Hao Feng. UI-FAME: A High-Performance Forgetting System for Creating Views of Ontologies. In *Proc. CIKM 2020.* doi: 10.1145/3340531.3417412.

[2] Zhao Liu, Brook Zhang, Chang Lu, **Wenxing Deng**, Hao Feng, and Yizheng Zhao. Tracking Semantic Evolutionary Changes in Large-Scale Medical Ontologies. Submitted to *VLDB 2021.*

[3] Tongchao Cui, **Wenxing Deng**, Liguo Zhang, Zibo Ma, and Fengyao Jiang. Adaptive Optimization of Traffic Signal Timing via Deep Reinforcement Learning. Submitted to *Journal of Advanced Transportation.*

Research Experience

- **Tracking Semantic Evolutionary Changes in Large-Scale Medical Ontologies** Remotely
  (National Natural Science Foundation of China: No. 62006114)
  Research Assistant *June 2020 - Oct. 2020*
  - Developed a tailor-made uniform interpolation method for the task of computing logical difference in large-scale medical ontologies, serving as back-end technology in digital healthcare providers' knowledge base interface.
  - Identified reasoning focuses and demands, optimized codes for calculating logical difference, and handed over the set-up of the system with Babylon Health.

- **Adaptive Optimization of Traffic Signal Timing via Deep Reinforcement** Beijing University of Technology
  Learning
  Research Assistant *Mar. 2020 - Oct. 2020*
  - Proposed a traffic light timing optimization scheme based on deep reinforcement learning, which dynamically adjusts the green light time and phase at an intersection with the goal of minimizing vehicle delay time.
  - Implemented a deep reinforcement learning network (in Python), and reduced waiting time and average queue length in various traffic flow modes by more than 33.4% compared to traditional timing control.

- **UI-FAME: A High-Performance Forgetting System for Creating Views of Ontologies** Remotely
  (Fundamental Research Funds for the Central Universities: No. 14380006 and No. 14380007)
  Research Assistant *Sept. 2019 - June 2020*
  - Implemented and optimized the UI-FAME system for creating logical differences in description logic ontologies (in Java), useful for many ontology-based knowledge processing applications.
  - Developed a bespoke ontology analysis tool for the ontology processing and management tasks undertaken in Babylon Health, a digital healthcare company based in London.

- **High-building Cleaning Robot** Beijing University of Technology
  Research Assistant *Mar. 2018 - Nov. 2018*
  - Designed the hardware system of a robot which could detect obstacles using infrared range finder and adjust its speed according to speed difference between motors that are equipped on the left and right side of the robot.
  - Developed five core modules of the robot's system (in C), including key module, infrared distance measurement module, communication module, drive circuits module and motors module.

Work Experience

- **New Energy Vehicle Clearing System - Jiangling Motors** Nanchang, China
  Software Engineering Intern *Aug. 2020 - Sept. 2020*
  - Optimized and maintained a database containing vehicle information and personnel information via MySQL, which support the clearing system used by the whole sales department and the finance department.
  - Preprocessed the size of receipts of vehicles and filtered the photos into different classes, reducing the overall process time by 2%.

Skills

- **Programming**: Python, C, Java, SQL, LaTeX, assembler language
- **Frameworks & Software**: Matlab, Numpy, Pandas, GIT