Yinglong **He**

Research Assistant · Data Engineer

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Summary

Received bachelor's and master's degrees from Huazhong University of Science and Technology (HUST, ranked 9th in China). He is currently a Ph.D. candidate at the University of Birmingham (UoB), whose research interests are **optimization and control** of connected, autonomous and electrified vehicles, the intelligent transportation system (ITS), data mining and pattern recognition in driver and vehicle behaviors, and etc. He has expertise in **data analysis and visualization, scientific writing, web scraping, and etc**.

Education

UoB (University of Birmingham)

Birmingham, U.K.

Ph.D. in Mechanical Engineering — *Sep. 2017 - 2021 (anticipated)*

- 2017 - 2019: **School Scholarship** (TOP 1 %, £ 23 K per year), *School of Engineering, UoB*.

HUST (Huazhong University of Science and Technology)

Wuhan, China

M.S. in Energy and Power Engineering — *Sep. 2014 - Jun. 2017*

- 2016: **National Scholarship** for Graduate Students (TOP 0.2 %, ¥ 20 K), *Chinese Ministry of Education*.
- 2015: Guanghua Educational Scholarship (TOP 5 %, ¥ 1 K), *Guanghua Education Foundation*.
- 2015: Zhixing Educational Scholarship (TOP 5 %, ¥ 1 k), *HUST*.
- 2014 - 2017: First Prize of Academic Scholarship, HUST (TOP 10 %, ¥ 8 K per year), *HUST*.

HUST (Huazhong University of Science and Technology)

Wuhan, China

B.S. in Energy and Power Engineering — *Sep. 2010 - Jun. 2014*

- 2013: Outstanding Undergraduate Researcher Award (TOP 2 %), *HUST*.
- 2012 & 2013: **National Endeavor Scholarship** (TOP 1 %, ¥ 5 K per year), *Chinese Ministry of Education*.
- 2011: Merit Student (TOP 5 %), *HUST*.
- 2011: **National Scholarship** for Undergraduate Students (TOP 0.2 %, ¥ 8 K), *Chinese Ministry of Education*.

Honors & Awards

International

2020	**Best Simulation Application Paper Award**, 99th Annual Meeting of the Transportation Research Board (TRB, **the world's largest transportation research conference**)	*Washington, U.S.A*

Domestic

2018	**Finalist**, "Chunhui Cup" Chinese Overseas Students Innovation and Entrepreneurship	*Guangzhou, China*
2013	**2nd Prize**, "Challenge Cup" Competition of Science and Technology in Hubei Province	*Wuhan, China*
2012	**1st Place**, The 1st WHU (Wuhan University) - HUST Dragon Boat Race	*Wuhan, China*

Experience

European Commission - Joint Research Centre (JRC)

Ispra, Italy

External Expert — *Apr. 2019 - June 2020*

- Created a database of vehicle specifications obtained from web scraping.
- Conducted experiments for evaluating **advanced driver assistance systems (ADAS)** such as adaptive cruise control (ACC).
- Installed the vehicle test equipment for reading live data from the CAN bus, the OBD II, the GPS module, and etc.
- Developed a dynamics-based **car-following model (MFC)** for electrified vehicles.
- Contributed to the development of a Python library (https://pypi.org/project/co2mpas-driver) for microsimulation.
- Published **four journal articles** and **one conference paper**; received **the best paper award** from an international conference.

Laboratory of Connected and Autonomous Systems for Electrified Vehicles (CASE-V), UoB

Birmingham, U.K.

Engineering Lab Assistant — *Jan. 2019 - Dec. 2019*

- Provided **an IoT (internet of things) platform** to connect the real-time digital models to real vehicles and powertrain components.
- Built **the vehicle co-simulation system** with hardware in the loop (HiL) and integrated MATLAB/Simulink, AVL PUMA and IPG CarMaker.

Mechanical Engineering, UoB

Birmingham, U.K.

Teaching Assistant — *Sep. 2017 - Dec. 2019*

- Assisted **courses** such as Engineering Mathematics, Vehicle Engineering, CFD & FEA, C++, Python, MATLAB/Simulink, and etc.

Association of British Chinese Professors (ABCP) *Birmingham, U.K.*

Executive Assistant *Mar. 2018 - Mar. 2020*

- Contributed to the design of the association **logo, posters, banners, and etc**.
- Designed **brochures and programs** for the first & second ABCP annual meetings.

School of Energy and Power Engineering, HUST *Wuhan, China*

Head of the Graduate Students Union *Sep. 2014 - Jun. 2015*

- Managed a committee of 50+ people, which served and represented 800+ graduate students.

State Key Laboratory of Coal Combustion (SKLCC) *Wuhan, China*

IT and PC Consultant *Mar. 2016 - Sep. 2016*

- Built and maintained a website (http://xu.energy.hust.edu.cn/) for the purpose of laboratory information management.

Shanghai Electric Group Co., Ltd *Shanghai, China*

Intern Engineer *Aug. 2013 - Sep. 2013*

- A traineeship for the design, manufacture and sale of power generation equipment.

Skills

Research interests Connected, automated, and electrified vehicles; intelligent transportation system (ITS); multiobjective optimization; artificial intelligence(AI); machine learning (ML); pattern recognition; and data mining.

Programming Python, MATLAB/Simulink, C++, and LaTeX.

Languages Chinese (native) and English (professional working proficiency).

Software Microsoft office, Photoshop, InDesign, CAD, CFD, AWS DynamoDB/Lambda/EC2/S3 and etc.

Publications

Journal Articles

1. **Y. He**, C. Wang, Q. Zhou, J. Li, M. Makridis, H. Williams, G. Lu*, and H. Xu*. Multiobjective component sizing of a hybrid ethanol-electric vehicle propulsion system. *Applied Energy*. 2020 May 15;266:114843. (**SCI, IF = 8.426, JCR Q1**)
2. **Y. He**, Q. Zhou, M. Makridis, K. Mattas, J. Li, H. Williams, and H. Xu*. Multiobjective co-optimization of cooperative adaptive cruise control and energy management strategy for PHEVs. *IEEE Transactions on Transportation Electrification*. 2020 Feb 17. (**SCI, IF = 5.270, JCR Q1**)
3. **Y. He**, M. Makridis*, G. Fontaras, K. Mattas, H. Xu, and B. Ciuffo. The energy impact of adaptive cruise control in real-world highway multiple-car-following scenarios. *European Transport Research Review*. 2020 Dec;12(1):1-11. (**SCI, IF = 1.727, JCR Q3**)
4. **Y. He**, M. Makridis*, K. Mattas, G. Fontaras, B. Ciuffo, and H. Xu. Introducing electrified vehicle dynamics in traffic simulation. *Transportation Research Record*. 2020. (**SCI, IF = 0.748, JCR Q4**)
5. **Y. He**, X. Gao*, Y. Qiao, and M. Xu*. Occurrence forms of key ash-forming elements in defatted microalgal biomass. *Fuel*. 2017 Jul 15;200:182-185. (**SCI, IF = 4.908, JCR Q1**)
6. **Y. He**, D. Yu*, T. Lei, W. Lv, and M. Xu*. Chemical looping CO2/CH4 reforming using Fe-based oxygen carrier for syngas production. *Huagong Xuebao/CIESC Journal*. 2016;67(12):5222-5228.
7. Q. Zhou*, **Y. He**, D. Zhao, J. Li, Y. Li, H. Williams, and H. Xu. Modified particle swarm optimization with chaotic attraction strategy for modular design of hybrid powertrains. *IEEE Transactions on Transportation Electrification*. 2020.
8. B. Shuai, Q. Zhou*, J. Li, **Y. He**, Z. Li, H. Williams, H. Xu, and S. Shuai. Heuristic action execution for energy efficient charge-sustaining control of connected hybrid vehicles with model-free double Q-learning. *Applied Energy*. 2020 Jun 1;267:114900.
9. J. Li, Q. Zhou, **Y. He**, H. Williams, and H. Xu*. Driver-identified supervisory control system of hybrid electric vehicles based on spectrum-guided fuzzy feature extraction. *IEEE Transactions on Fuzzy Systems*. 2020 Feb 11.
10. Q. Zhou, J. Li, B. Shuai, H. Williams, **Y. He**, Z. Li, H. Xu*, and F. Yan. Multi-step reinforcement learning for model-free predictive energy management of an electrified off-highway vehicle. *Applied Energy*. 2019 Dec 1;255:113755.
11. J. Li, Q. Zhou, **Y. He**, B. Shuai, Z. Li, H. Williams, and H. Xu*. Dual-loop online intelligent programming for driver-oriented predict energy management of plug-in hybrid electric vehicles. *Applied Energy*. 2019 Nov 1;253:113617.

Conference Papers

1. **Y. He**, B. Ciuffo*, Q. Zhou, M. Makridis, K. Mattas, J. Li, Z. Li, F. Yan, and H. Xu. Adaptive cruise control strategies implemented on experimental vehicles: A review. *9th IFAC SymJposium on Advances in Automotive Control AAC*. 2019 Jan 1;52(5):21-27.

Patents

1. D. Yu*, **Y. He**, M. Xu, W. Lv, and B. Fan. A novel process for using CO2 in the production of dimethyl ether. China Patent (ZL 2014 1 0853700.5). June 22, 2016.