HAOGUANG YANG

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Education

2014–2018   **Bachelor of Engineering. Tsinghua University, Beijing, China.**
Major in Engineering Mechanics, enrolled in TEEP (Tsien Excellence in Education Program, elite program consists of top 25/90 students).

Courses Taken: Numerical Analysis, Parallel Computing, Signals and Systems Analysis, Fundamentals of Dynamics and Control, Theory of Automatic Control, Finite Element Method, Advanced Calculus, Advanced Algebra and Geometry, Computer Programming Basis, Fluid Mechanics, Solid Mechanics, etc.

Test Scores: TOEFL iBT 106; GRE 151(Verbal), 169(Quantitative), 4.0(Writing).

2017.8–2018.2   **Visiting Student, Purdue University, Indiana, USA.**
Joined Collaborative Robotics Lab led by Dr. Richard Voyles.

2011–2014   **High School Diploma. Dong-Shan High School, Meizhou, Guangdong Province, China.**
Gained basic concepts of science and became interested in engineering.

Projects

2017.8–present   **Project with GE on optimization of a distributed control system.**

Mentor:	Dr. Voyles, Richard; Dr. Sundaram, Shreyas
Intro:	Dynamic optimization and allocation of tasks on an industrial distributed control system running real-time operating systems. Development and implementation of a two-pass task consolidator for rate monotonic scheduling on multi-node systems.

2015.11–2017.9   **Agile Vehicle Project.**

Mentor:	Dr. Zheng, Gangtie
Intro:	Reinvent future model of cars and promote collaborative intuitive driving. In charge of the development of control framework both software and hardware, suggested a comprehensible "grey-box" machine-learning-based method for human-in-the-loop autonomous or collaborative driving, also worked on vehicle dynamics and control modelling, suspension design, control-related electronics and ROS-based software development.

2016.10–2017.8   **Gamma-Ray Integrated Detectors (GRID) Project.**

Mentor:	Dr. Feng, Hua
Intro:	In search for electromagnetic counterparts of gravitational waves using CubeSat Constellation. Mainly involved in affairs related to satellite bus: interface of the payload, heat and power management, etcetera.

2016.8–2016.11   **Solution of a locomotive service robot.**

Mentor:	Dr. Zhang, Xinyu
Intro:	Providing solutions for the unmanned on-campus logistic vehicle in collaboration with JD Mall in China. Assisted in developing embedded solutions for the automatic driving systems.

2014.12–2016.2   **TsingHua University Satellite Simulator (THUSS) Project.**

Mentor:	Dr. Zheng, Gangtie
Intro:	Microsat Group provides solution for physical simulation of rendezvous and docking of spacecraft on desktop. Worked as a core member and focused on systems and structural design, as well as developing variable-damping control method and vision tracking software.

Publications

1. *Centralized-distributed control systems for four-wheel-independent driving-and-steering electric vehicles.* Haoguang Yang; Xuexuan Zhao; Zilin Zhu; Jiongming Shi; Gangtie Zheng. Patent, Application Number CN:201710758764.0;

2. *Modular single wheel driving unit for electric vehicles.* Haoguang Yang; Xuexuan Zhao; Zilin Zhu; Jiongming Shi; Gangtie Zheng. Patent, Application Number CN:201710757219.X.

3. *A four-wheel-driven independent-steering omnidirectional electric vehicle system.* Zhengkun Gao; Boxin Li; Xuexuan Zhao; Qizhong Li; Zilin Zhu; Jiongming Shi; Haoguang Yang; Gangtie Zheng. Patent, Application Number CN:201710313647.3;

4. *Omnidirectional single-sided independent suspension system.* Haoguang Yang; Qizhong Li; Boxin Li; Yu Chen; Zhengkun Gao; Jiongming Shi; Gangtie Zheng. Patent, Application Number CN:201710313082.9;

5. *A fully drive-by-wire system for electric vehicles.* Haoguang Yang; Xuexuan Zhao; Jiongming Shi; Gangtie Zheng. Patent. Application Number CN:201710810098.0;

6. *Implementation of three DoFs small satellite ground simulation system.* Hongxiang Yao, Yunjie Wang, Jie Cui, Jiali Bao, Haoguang Yang, Zilin Zhu, Gangtie Zheng, and Zheng Hong Zhu. 54th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum (AIAA 2016-0697);

7. *Physical simulation system for satellite.* Hongxiang Yao; Jie Cui; Yunjie Wang; Haoguang Yang; Jiali Bao; Gangtie Zheng. Patent, Number CN:201510680932.X;

8. *A kind of electric and electronic systems for electric vehicles.* Xuexuan Zhao; Haoguang Yang; Zilin Zhu; Jiongming Shi; Gangtie Zheng. Patent, Application Number CN:201710682317.1.

Honors and Awards

2017.4   **Special Award and Third Prizes in the 35th Challenge Cup of Tsinghua University**
GRID Project received Special Award; *Agile Vehicle* and *Solution of a locomotive service robot* won Third Prizes.

2017.3   **Silver Medal of the 45th Exhibition of Inventions of Geneva**
As a member of the Agile Vehicle project team, which was selected as one of the eight teams of Tsinghua University delegation to attend the 45th International Exhibition of Inventions of Geneva.

2016.9   **Scholarship for Outstanding Scientific Researches**
Won scholarship of Tsinghua University for outstanding scientific research practices of sophomore year.

2016.5   **Headline Groups or Individuals of School of Aerospace**
Awarded to Microsat Group for generating profit from the THUSS Project and established Fund for Scientific Research among TEEP Students.

2015.11   **Outstanding SRT (Scientific Research Training) Project of Tsinghua University** (Ranked Top 1)
Awarded to Microsat Group for inventing and delivering THUSS satellite simulators for various customers. Also awarded Silver Prize in Social Practice Experience of Tsinghua University.

2013.9   Second Prize in the 27th Chinese Chemistry Olympiad
2013.5   Second Prize in the 29th High School Student Mathematics Olympiad of Guangdong Province
2013.4   Second Prize in the High School Student Biology Olympiad of China
2012.9   Second Prize in the 29th High School Student Physics Olympiad of China

Research Skills

OS	Windows, Linux
Programming	FORTRAN, C/C++, Python
Engineering	Arduino, ROS, OpenCV
Design	SolidWorks, Altium Designer, AutoCAD
Scientific	MATLAB, LabVIEW, MSC Adams, Abaqus, Fluent
Typography	Microsoft Office, LyX, Markdown, LaTeX

Service, Experience and Personal Interests

2017.8   **Academia Service,** review paper for WACV 2018 Conference.
2015.4   **Volunteering,** volunteer of 104th Anniversary of the Foundation of Tsinghua University.
2015.3   **Association Activities,** student associate of Astronomy Association, Tsinghua University.

Personal Interests Beyond Lab Hours: Swimming, playing the violin, astronomy, photography, exploring.