

GUANGZHENG DING

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EDUCATION

Huazhong University of Science and Technology

M.S. in Control Science and Engineering; Advisor: Prof. Jian Huang

GPA: 87.96/100

Wuhan, China

Sep. 2016 - Jul. 2019

University of Paris-Est

Visiting Student; Advisors: Prof. Samer Mohammed and Prof. Weiguang Huo

Vitry-sur-Seine, France

Oct. 2017 - Apr. 2018

Huazhong University of Science and Technology

B.S. in Automation

GPA: 3.82/4.0

Wuhan, China

Sep. 2012 - Jul. 2016

RESEARCH EXPERIENCE

Huazhong University of Science and Technology

Graduate Student

Wuhan, China

Sep. 2016 - Jul. 2019

- **Proxy-based sliding mode control for a pneumatic muscle actuator system**

I proposed a novel proxy-based sliding mode controller (PSMC) on a pneumatic muscle actuator system and analyzed the stability of the system based on Lyapunov theory. Both intrinsic system safety and accurate position tracking performance were guaranteed at the same time. A pneumatic muscle actuator system was built and experiments were carried out to validate the proposed controller. **(Publication:[4])**

- **Stability analysis of proxy-based control for a class of second order systems**

Inspired by the design process of the controller of a class of under-actuated systems, I developed a method which addressed the theoretical challenges on analyzing stability when applying proxy based controller on a class of second order systems. Simulation experiments were conducted on a underwater vehicle to verify the proposed method. **(Publication:[3])**

University of Paris-Est

Visiting Student

Vitry-sur-Seine, France

Oct. 2017 - Apr. 2018

- **Adaptive PSMC of knee/ankle joint orthosis to assist paretic patients**

I designed an adaptive proxy based sliding mode controller applied to both knee and ankle orthosis by introducing an adaptation interaction method which allows online tuning of the PID gains in the basic PSMC scheme. Experiments with a paretic patient showed better tracking results in the presence of parameter uncertainties and external disturbances compared with basic PSMC. **(Publication:[1,2])**

WORK EXPERIENCE

Xingji Technology Co., Ltd.

Senior Software Engineer

Shanghai, China

Nov. 2021 - present

- We built a big data platform where I deployed Hadoop cluster, Zeppelin(develop tool) and Flink on Linux system. I developed offline tasks using Spark SQL, to analyze user retention rate, source/destination of user access pages and present results using BI tool.
- I designed and implemented the back end of a system for configuring the user protocol in the background system and obtaining it dynamically on the client like phone or car. The system is constructed by SpringCloud using JAVA language and middleware technology like Redis.

China Electronics Technology Group Corporation

Software Engineer

Nanjing, China

Oct. 2019 - Oct. 2021

- I developed a system utilizing JQuery and Spring Boot for organization management and personnel management.

PUBLICATIONS

1. **Guangzheng Ding**, Weiguang Huo, Jian Huang, Yacine Amirat, and Samer Mohammed. “Robust and Safe Control of a Knee Joint Orthosis.” *IEEE International Conference on Intelligence and Safety for Robotics (ISR)*, pp. 343-348, 2018.(**Finalist for best student paper award**)
2. Weiguang Huo, Victor Arnez-Paniagua, **Guangzheng Ding**, Yacine Amirat, and Samer Mohammed. “Adaptive proxy-based controller of an active ankle foot orthosis to assist lower limb movements of paretic patients.” *Robotica*, vol. 37, no. 12, pp. 2147-2164, 2019.
3. **Guangzheng Ding**, Jian Huang, Bin Hu, and Zhihong Guan. “Proxy-based sliding mode stabilization of a class of second-order nonlinear system.” *11th Asian Control Conference*, pp. 2917-2922, 2017.
4. **Guangzheng Ding**, Jian Huang, and Yu Cao. “Proxy Based Sliding Mode Control for a Class of Second-Order Nonlinear Systems.” *International Conference on Intelligent Robotics and Applications*, pp. 879-888, 2017.

SKILLS

skills in research	MATLAB, LabVIEW, C/C++, Python, L ^A T _E X
skills in big data	Hadoop, Spark, Flink
skills in web development	SpringCloud, MySQL, Mybatis, Redis, Kafka, JQuery, Linux