SHENGJUN(DANIEL) ZHANG

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Cyber-Physical Energy System Laboratory (NTDP B241) ⋄ University of North Texas, Denton, TX 76207

EDUCATION

Doctor of Philosophy in Electrical Engineering
(Minor in Business Management) January 2018 - Current
Department of Electrical Engineering, College of Engineering
University of North Texas, GPA: 4.0/4.0
Supervisor: Prof. Tao Yang

Master of Science in Electrical Engineering January 2015 - January 2017
Tandon School of Engineering
New York University, GPA: 3.71/4.0

Bachelor of Science in *Automation of Honors Program* September 2010 - June 2014
College of Information and Electrical Engineering
China Agricultural University, GPA: 3.53/4.0

VISITING SCHOLAR

Visiting Scholar June 2018 - July 2018
Key Laboratory of Image Processing and Intelligent Control of Education Ministry
School of Automation, Huazhong University of Science and Technology
Supervisor: Prof. Ye Yuan

Visiting Scholar July 2018
Group of Networked Sensing and Control
College of Control Science and Engineering, Zhejiang University
Supervisor: Prof. Junfeng Wu

SKILLS AND INTERESTS

Interests	Control Theory, Non-linear Control, Robotics, Modeling and Simulation, Machine Learning, Deep Reinforcement Learning, Distributed Opimization, Connected Autonomous Vehicles.
Design Software	MATLAB, Python, TensorFlow, PyTorch, Java, C++, Embedded C, Linux, Assembly Language, Robot Operating System, V-Rep, LaTeX.

PROJECTS

Applying Q-Learning to a 4 × 4 Tic-Tac-Toe March 2018 - April 2018
Major Project as a part of curriculum

· Reinforcement learning is essential for applications where there is no single correct way to solve a problem. In this project, I show that reinforcement learning is very effective at learning how to play the game Tic-Tac-Toe, despite the high-dimensional state. The agent is not given information about what the blocks or grids look like - it must learn these representations and directly use the reward and Q-values to develop an optimal strategy. The Q-agent uses basic Q-Learning algorithm, and shows that it is able to achieve super-human performance.

H_∞ Control March 2016 - May 2016
Major Project as a part of curriculum

- H_∞ control is a method that could reduce modeling errors and unknown disturbances in a system, while providing quantifiable optimization of large scale multi-variable problems. I implemented both of bisection algorithm and the algorithm based on Algebraic Riccati Equations to solve H_∞ control problems.

UGV Integrated Mobile Platform January 2016 - May 2016
Control/Robotics Research Laboratory Project

- Modeled the UGV integrated mobile platform and simulated it via V-rep.
- Implemented SLAM and control algorithms on the integrated mobile platform to make the UGV run and avoid obstacles automatically.

Simulating Katana and a Wall Following Vehicle via V-rep March 2015 - May 2015
Major Project as a part of curriculum

- Model Katana robot arms, which has 4 revolute joins in V-rep.
- Simulated using Katana robot arms picking up an object from a desk and put it down to a different spot smoothly.
- Simulated a simple vehicle with a distance sensor and a force sensor follows a wall automatically.

Temperature Control System for Nucleic Acid Isolation and Purification Device January 2014 - June 2014
Graduation Project

- Determined the adoption of sectionally closed-loop control model after analyzing heating power and heat dissipated power; enabled the system to maintain required temperatures; designed control circuit to collect and adjust temperature and communicated with the upper computer; completed the control software by C language.

"Freescale" Intelligent Car October 2012 - June 2013
"Freescale" Intelligent Car Competition

- Designed different modules according to features of each component and integrated these modules together; applied PID algorithm and Kalman Filter to control and adjust the PWM duty ratio to make the car upright and manipulate the speed of the two direct-current motors as a way to handle direction.

License Plate Recognition Based on Matlab October 2012 - December 2012
Major Project as a part of curriculum

- Dealt with the received images by grey processing and median filter, and proceeded edge extraction by Roberts operator; extracted the plate numbers and carried out binarizations and corrections, and then charactered segmentation and normalization processing; adopted templates matching OCR to recognize the numbers.

JOURNAL PUBLICATION

Yahui Chen, Jianhan Lin, Qing Jiang, Qi Chen, **Shengjun Zhang**, Li Li, *"A Magnetic Nanoparticle Based Nucleic Acid Isolation and Purification Instrument for DNA Extraction of Escherichia Coli O157: H7."*, **Journal of Nanoscience and Nanotechnology**. 2016

CONFERENCE PUBLICATION

Junfeng Wu, **Shengjun Zhang**, Tao Yang, Ling Shi, Hong Wang, *"Distributed Economic Dispatch over Networks with Markovian Communication Losses"*, the 37th Chinese Control Conference(CCC) **Accepted**. April 2018

SERVICE

- Reviewer for **Neurocomputing** October 2018-present
- Reviewer for **IET Control Theory & Applications** October 2018-present

INTERNSHIP/TRAININGS

Electrical Engineer Internship,
Tellon Trading, Inc. Maintaining network and optimizing cost estimates. January 2017 - December 2017
Electrical Engineer Internship,
Tianjin OuYa Instrument Co., Ltd. July 2014 - December 2014

AWARDS AND CERTIFICATIONS

- College of Engeering Dean Tuition Scholarship March 2018
- Toulouse Graduate School Scholarship March 2018
- Courera Course Certifications of **Machine Learning** (License: NNBCAXYFA2HK) July 2016
- The second prize in the Physics Experiment Competition of colleges in Beijing March 2012
- The third-class scholarship for excellent academic performance 2012
- The second-class scholarship for excellent academic performance 2011

EXTRA-CURRICULAR

- Participated in **Texas System Day** April 2018
- Member on **USAPL** January 2018
- Participated in **UNT Powerlifting Team** January 2018
- Volunteer for **Haidian District of Beijing Disabled Persons Federation** April 2012
- Volunteer for **Sun Village Orphan Asylum** March 2011

DECLARATION

I hereby declare that all the details furnished above are true to the best of my knowledge and belief.