Zeyuan Jin

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EDUCATION

Columbia University, Graduate school of Engineering and Applied Science, New York, NY Expected Dec. 2017
MS in Mechanical Engineering, GPA: 4.0/4.0
Related Coursework: Numerical Methods, Modeling & Identification of Dynamic Systems, Introduction to Robotics, Reinforcement Learning, Machine Learning, Introduction to Control Theory, Advanced Machine Dynamics

Zhejiang University, College of Energy, Zhejiang, China Sep. 2012-June 2016
BE in Energy and Environment Engineering,
Rank: 2 among the 55 students of the Engineering Department GPA: 3.89/4.0
Related Coursework: C Programming design, Machine Design, CAD/CAM, Microcomputer Fundamentals & Applications, Automatic Control Theory, Thermodynamics, Heat Transfer, Fluid Mechanics

PROJECT EXPERIENCE

Reinforcement Learning in Quadrator Navigation, Columbia University, NY Oct .2017 - Now
***Team Leader*,** Course Project
- Built simulation environment with Air Sim using Unreal engine
- Implemented the deep Q-learning, double Q-learning method for test
- Introduced neural network visualization and transfer learning for Atari games

Self-driving Car, Udacity Nanodegree June 2017 - Now
- Adopt PID control and model predictive control method for self-driving car in the simulator
- Implemented extended and unscented Kalman Filter to track surrounding pedestrians and cars in the simulator with C++
- Trained an agent imitating human's driving behavior in the simulator based on NIVIDA model with Keras
- Detected and tracked vehicles using sliding window methods with SVM classifier
- Trained a convolutional neural network to classify traffic sign with 96% test accuracy with Tensorflow

Food Printing, Columbia University, NY Sep. 2016 - Now
***Research Assistant*,** Supervisor: Hod Lipson
- Explored various kinds of food materials for printing and extended the machine capability of printing meat
- Programmed for food print including switching materials, controlling layer height and visualizing the process with python
- Carried out experiment for multi-material print and printed world first cooked multi-material food
- Implemented the food printer with laser sensor (1%) for high-accuracy feedback control

Blackjack Game Application, Columbia University, NY Apr. 2017-May 2017
Team Leader, Course Project
- Built a Blackjack Android Game, which allows player to play blackjack with computer (dealer)
- Added recommendation system calculating probability as guidance for player to make decision

Expedia Data Analysis, Columbia University, NY Mar. 2017
Core Member
- Analyzed tourists' preference for cities according to season, number of group members and cities' criminal rate
- Classified cities's type according to possible tourists' activities with EM method and won Best In Show award in the DataFest

Optimal Motion Plan for a Dart-throwing Manipulator, Columbia University, NY Oct. 2016 - Dec. 2016
Team Leader, Course Project
- Researched on human throwing motion analysis and designed armed-like manipulator's control
- Designed a 4-degree-of-freedom humanoid dart-throwing manipulator and simulated the motion of throwing with SolidWorks
- Analyzed kinematics and dynamics properties of two throwing gestures and planned the motion with MATLAB

Study on a Cascade Pulse Tube Cooler with Energy Recovery, ZJU, China May 2015 - June 2016
Research Assistant, Supervisor: Gan Zhihua
- Simulated cascade pulse tube with Sage, optimized the parameters for the device and designed it with SolidWorks
- Theoretically provided the formula for length of transmission tube (key part in the project)
- Built the test platform and improved the efficiency of the cooler by 9% compared to the former one in the experiment

Capture of Carbon Dioxide with LNG Cold Energy, ZJU, China Sep. 2014 - May 2015
Team Co-leader, Supervisor: Qiu Limin
- Experimented and optimized the existing visualized carbon dioxide capture system
- Designed LNG cold energy utilization process for systems and reduced energy consumption of carbon dioxide capture to 0
- Third prize in Chinese Scientific & Technological Creative Competition on Energy Conservation and Emission Reduction

Thermoelectric Refrigeration (Bohr Effect), ZJU, China Mar. 2014 - Sep. 2014
Core Member, Supervisor: Qiu Limin
- Fundamental principles study of thermoelectric refrigeration with focus on its application
- Design of portable thermoelectric refrigerator with variable volume driven by solar energy
- Design of Thermoelectric Refrigeration Based Desert Water Irrigation System

EXPERIENCE

Classical Control Systems, Columbia University, NY Sep. 2017 - Now
Grader, Supervisor: Longman Richard
- Graded homework and exams and helped create the homework and solutions
- Gave review session to students and answered their questions

Changfa Refrigeration LTD., Jiangsu, China July 2014 - Aug. 2014
Intern, Technology Assistant,
- Studied product information and helped in daily business operation
- Helped design a fin with SolidWorks and simulated its capability

PATENTS
- L Y Wang, Z H Gan, C H Yin, X Q Zhi, J J Wang and **Z Y Jin**, Indirect Measurement of Spring Stiffness and Dynamic Quality in Linear Compressor, China, ZL201510222714.1
- Z H Gan, L Y Wang, X Q Zhi, C H Yin, J J Wang and **Z Y Jin**, Indirect Measurement of Motor Thrust and Damping Factor in Linear Compressor, China, ZL201510223274.1
- Z Y Sun, L M Qiu, J N Mao, **Z Y Jin**, Y J Yu, and Y N Wang, Thermoelectric Refrigeration Based Desert Water Irrigation System, China, ZL201520087521.5, August 12, 2015

PUBLICATIONS
- Wang, Longyi et. al., Study on a Cascade Pulse Tube Cooler with Energy Recovery: New Method for Approaching Carnot, Cryogenic Engineering Conference, Tucson, AZ, USA, 2015.
- Wang, Longyi, **Zeyuan Jin** and Zhihua Gan, Acoustical Impedance Property of Linear Compressor and Its Parameters, China Linear Electric Motor Symposium, Jinan, China, August 2015.
- Wang, Longyi et. al., Acoustical Load Based Linear Compressor Parameters, Electrical Engineering, October 2015.
- Yin, Chenghou et. al., Aluminum Alloy RRR Value Test with Cryogenic Refrigerator, Cryogenic Engineering, August 15, 2015.

HONORS & AWARDS
- Outstanding Graduate Thesis June 2016
- Hope Senlan Scholarship Dec. 2015
- Cen Kefa Scholarship Dec. 2014
- Second-Class Scholarship for Outstanding Students Dec. 2014
- Second-Class Scholarship for Outstanding Merits Dec. 2014
- Huamei Scholarship Dec. 2013
- First-Class Scholarship for Outstanding Students Dec. 2013
- First-Class Scholarship for Outstanding Merits Dec. 2013
- First Prize in Zhejiang Provincial University Student Physics Innovation Contest Dec. 2013
- Third Prize in Zhejiang Provincial University Student Calculus Contest July 2013

LEADERSHIP & ACTIVITIES
- ***Member,*** interpretation for a visit of high school students to fantastic cryogenic world Oct. 2015
- ***Member,*** 7th among 33 teams in Zhejiang University Basketball Competition May 2015
- ***Volunteer,*** interpretation in the 8th China Flower Exposition Aug. 2013
- ***Leader*****,** blood donation organization after Gaokao in my high school June 2012

SKILLS
Software: SolidWorks, Matlab, Microsoft Office, Sage, Aspen
Programming Language: Python, C Programming, C++, Java, R
Engineering: CAD(Drafting), 3D Modeling, Analysis and design
Language: Mandarin (native speaker)