

Guanqun Yang

MASTER STUDNET, ELECTRICAL AND COMPUTER ENGINEERING, UCLA

EDUCATION	<p>University of California, Los Angeles (UCLA), Los Angeles, U.S. <i>Master of Science</i>, Electrical and Computer Engineering, <i>Sep' 17 - Dec' 18 (Expected)</i> GPA: 3.85/4.00 (Overall)</p> <p>Northeastern University (NEU), Shenyang, China <i>Bachelor of Engineering</i>, Automatic Control, <i>Sep' 13 - Jul' 17</i> Ranking: 23/266 (Overall)</p>
RESEARCH INTERESTS	<p>Statistical Machine Learning Natural Language Processing, Computer Vision</p>
AWARDS & ACHIEVEMENTS	<p>JASSO Scholarship for JUACEP 2018 summer program, Nagoya University, Japan Honorable Mention Award for "Space Debris Terminator: A Comprehensive Approach" in MCM/ICM 2016, Consortium for Mathematics and Its Applications (COMAP) Second Class Academic Excellence Scholarship 2017, Northeastern University, China Third Class Academic Excellence Scholarship 2015, Northeastern University, China Third Class Academic Excellence Scholarship 2014, Northeastern University, China</p>
ACADEMIC PROJECTS	<p>Design and Implementation of a Flapping Propulsion Plant for Underwater Robot <i>Supervisor: Prof. Haitao Gu</i> <i>Shenyang Institute of Automation, CAS</i> <i>Nov '15 - Jul '16</i></p> <ul style="list-style-type: none">- Designed and conducted mechanical and hydraulic simulation of the flapping propulsion system based on expected system dynamics and other technical specifications.- Multiple control algorithms were employed for motor controls and the coordinations between different AC motors were specifically considered.- Field experiment indicated that the system could work as initially specified. <p>Pose Estimation of Mobile Robots Based on the Integration of IMU and Vision <i>Supervisor: Prof. Yunzhou Zhang and Dr. Hao Chu</i> <i>Northeastern University, China</i> <i>Nov '16 - Jun '17</i></p> <ul style="list-style-type: none">- Put forward a novel filtering-based framework for pose estimation and multi-sensor perception of mobile robot under abrupt maneuvering and constant environment fluctuations.- Implemented the filtering pipeline on TurtleBot mobile robot with Robot Operating Systems (ROS).- Carried out extensive tests under different configurations to validate the robustness of the algorithm.
COURSE PROJECTS	<p>Speech Segment Classification for Person Identification <i>Course: Digital Speech Processing</i> <i>UCLA</i> <i>Feb '18 - April' 18</i></p> <ul style="list-style-type: none">- UCLA Speaker Variation Database is utilized for model building and evaluation.- Multiple speech features including pitch, formants, voice source features and sub-glottal features are extracted for speaker characterization and model training.- Different learning algorithms including GMM, UBM and dimensionality reduction method including LDA, i-Vector are intensively studied and experimented.- Performances of classifier is evaluated using different settings including noise-free environment and noisy environment. <p>A Generic Linear Classifier Implementation for Image Recognition <i>Course: Linear Programming</i> <i>UCLA</i> <i>Feb '18 - March '18</i></p>

- The formulation of multi-class classification problem with linear programming theory is put forward and a generic solver available in both Python and MATLAB are developed.
- The performance of the proposed multi-class classifier is evaluated on multiple datasets including M-NIST.

Data Mining Project Series

Course: *Large Scale Data-Mining: Models and Algorithms*

UCLA

Jan '18 - March '18

- Implemented textual data binary/multi-class classification and clustering task with algorithms including SVM, naive Bayes and K-Means. Multiple configurations for data preprocessing, parameter tuning have been interpreted, analyzed and compared.
- Implemented a working recommendation system using both model-based collaborative filtering and neighborhood-based collaborative filtering. Algorithms including k-NN, NMF, MF with bias and naive Bayes are involved and model performance for these algorithms are compared.
- Implemented a popularity predictor of six different hashtags regarding 2015 SuperBowl Tweet data based on user location and tweet meta-data itself, respectively. Real-world data preprocessing is carefully carried out and content-based features are selected. A miscellaneous of algorithms including polynomial regression, neural network are employed for predictor training and evaluation.

SVPWM Controller Implementation for 3-Phase Asynchronous Motor

Course: *Control System of Electric Drives*

Northeastern University, China

Oct '16

- Configure the hardware including IGBT bridge, tachogenerator, AC motor and others into appropriate settings.
- Implemented SVPWM algorithm with current and rotating speed double feedback loop on TMS320F2812 DSP.
- Performing experiments on different modes of AC motor and the system dynamics of the motor showed expected behaviors.

COMPUTER SKILLS

Languages: C/C++, Python, MATLAB/Simulink, R, Shell, \LaTeX
Framework: Tensorflow, PyTorch, OpenAI Gym
Tools: JabRef, EndNote, Docker, Git

EXTRA INTERESTS

LeethCode: 257/775 solved
Hobbies: answering questions on Mathematics StackExchange, CrossValidated and Zhihu, jogging, hiking, reading