Tong Shen

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SUMMARY

⋆ Apply for a **Machine Learning Engineer position**, starting at **Summer 2018**.

- Hands-on experience to tackle problems with **Neural Networks and TensorFlow**, proficiency in **Python and C++**
- Demonstrated expertise in implementing learning algorithms and conducting feasibility analysis in complex scenario

EDUCATION

Purdue University, West Lafayette, IN 08/2016 - 05/2018
Master of Science in Mechanical Engineering, GPA: 3.97/4.00

Xi'an Jiaotong University, Shannxi, China 08/2012 - 05/2016
Bachelor of Science in Measurement Technique and Instrument, GPA: 3.11/4.00

SKILLS

Programming Skills Python, C++, MATLAB, R
Technical Skills TensorFlow, OpenCV, skicit-learn, LightGBM, CNN, RNN, LSTM, Reinforcement Learning

RESEARCH AND PROFESSIONAL EXPERIENCE

Department of Mechanical Engineering, Purdue University: 10/2016 - Present
Graduate Research Assistant *West Lafayette, United States*

Fine-Grained Visual Categorization over 8142 Categories on iNaturalist Species Dataset (On-going)
- Fine-tuned our model based on an ensemble of ImageNet pretrained models: InceptionResnetv2 and Inceptionv4.
- Aggressively augmented minority class images and implemented weighted cross entropy to compensate data unbalance.
- Incorporated attention model to localize objects in images and detected their fine-grained features to increase accuracy

Obfuscated Face Reconstruction via Deep Generative Adversarial Networks(GANs)
- Employed TensorFlow to set up and fine-tuning Neural Nets model and monitored the whole training process
- Designed end-to-end ResNet to recover image details and incorporated VGG net to perceptually evaluate the result
- Implemented advanced GANs to reconstruct image from its 8x shrinked counterpart (Not recognizable by human)
- First work to formalize 8x heavily blurred image reconstruction with GANs and obtained great result in CelebA dataset

Arduino Controlled Autonomous Robot for Balls Collection and Disposal (Simulating Mars Rover)
- Incorporated Video Camera and image segmentation algorithm to locate the target and container in real time
- Developed PID algorithm for the robot to track and follow the target, through C programming in Arduino IDE
- Collaborated on the design and fabrication of the robots powertrain, sensor and navigation hardware
- 1^{st} place in the final competition

Institute of Precision Engineering, Xi'an Jiaotong University: 02/2015-06/2016
Undergraduate Research Assistant *Xi'an China*

The Structured Illumination Optical Sectioning Microscope for 3D Imaging on Micron-scale Surface
Adopted by our department to measure surface parameters of MEMS devices

Subwavelength Focusing by Binary Multi-annular Plates(MAPs): Design and Experiment
Published in the Journal of Optics in Feb.2015

INTERN EXPERIENCE

Optical Sensor Designer, Xian Huateng Internet of Things Co., Ltd., Xian, China 05 - 08/2015
- Hands-on designed and fabricated smart optical switcher and remote control as part of smart home

Q.C Inspector, NCS Testing Tech Co., Ltd., Beijing, China 06 - 08/2014
- Conducted quality evaluation for final products and monitor raw components quality under specification

LEADERSHIP AND ACHIEVEMENTS

Vice President of Sports Department of the Student Union 09/2013 - 06/2014
- Co-organized annual basketball games of Mechanical Engineering and found sponsorship to operate the whole event

The Second Prize in TiC100 Cup in National Creative Business Design Competition 04/2015
- Collaborated with engineering students to design a series of electronic devices to realize smart home, such as smart alarm clock, smart blinds windows and smart humidifier.