Pan WEI

Contact Information

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LinkedIn

Work Experience

Amazon, Alexa AI, Research Scientist, 09/04/2018 to present, Greater Boston Area

- Bootstrapping Amazon's Alexa Natural Language Understanding (NLU) models for foreign/non-English languages, reducing the required time by 40%.
- Expanding Alexa's ability to understand multiple languages simultaneously.
- Data augmentation for low resource Alexa languages to improve NLU model performance and alleviate human manual annotation effort.
- Working with business managers to weigh trade-offs between optimal scientific solutions and business needs.
- Presenting proposals and results backed by data and coupled with actionable conclusions to different groups in Amazon in internal conferences and brownbags.

Research Experience

Research Assistant, Mississippi State University Fall 2014 to August 2018

- Detection Fusion in an Industrial Multi-sensor Collision Avoidance System (funded by a tier–one industrial company)
- Object Detection using Deep Learning (funded by a tier–one industrial company)
- Runway Assessment via Remote Sensing (funded by U.S. Army Engineer Research and Development Center (ERDC))

Education

Mississippi State University, Mississippi State, MS, U.S.A.

Ph.D., Electrical and Computer Engineering, Graduation date: August 15, 2018

- Dissertation: *Fusion for object detection*

University of York, York, U.K.

Master of Science (by research), Electronics,

- Thesis: *Further exploitation of asymmetric binary tree coding of contour images*

Beihang University, Beijing, P.R.China

Bachelor of Engineering, Automation,

Skills

- Programming language: Python (sklearn, pandas, numpy, keras), Matlab
- Machine learning models: Logistic Regression, Conditional Random Field, DNN, LSTM

Honors and Awards

- Bagley College of Engineering "**Hall of Fame**" award. One of two selected for induction into the Hall of Fame 2018 for demonstrating superior academic achievement, leadership, and service/character. (2018)
- Graduate Student Ambassador for Department of Electrical and Computer Engineering (2017–2018)
- Women Team Champion at "National Collegiate Table Tennis Association (NCTTA) Dixie Division Tournament" (2016-2017, 2017-2018)

Publications

Journal articles

1. **P. Wei**, J. E. Ball, D. T. Anderson, "Fusion of an ensemble of augmented image detectors for robust object detection," *MDPI journal Sensors*, 18(3), 894, March, 2018.

2. **P. Wei**, J. E. Ball, "Detection fusion in an industrial multi-sensor collision avoidance system," *MDPI journal Electronics*, 7(6), 84, May, 2018.

Conference articles

1. **P. Wei**, J. E. Ball, D. T. Anderson, "Multi-sensor conflict measurement and information fusion," *SPIE Defense, Security, and Sensing*, April, 2016.

2. **P. Wei**, J. E. Ball, D. T. Anderson, A. Harsh, C. Archibald, "Measuring conflict in a multi-source environment as a normal measure," *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, December, 2015.

3. J. E. Ball, **P. Wei**, "Deep learning hyperspectral image classification using multiple class-based denoising autoencoders, mixed pixel training augmentation, and morphological operations," *International Geoscience and Remote Sensing Symposium (IGARSS)*, 2018.

4. J. E. Ball, D. T. Anderson, **P. Wei**, "Challenges and some proposed solutions for handing limited training data when using deep learning in remote sensing," *International Geoscience and Remote Sensing Symposium (IGARSS)*, 2018.

5. L. Dabbiru, **P. Wei**, A. Harsh, J. White, J. E. Ball, J. Aanstoos, P. Donohoe, J. Doyle, S. Jackson, J. Newman, "Runway assessment via remote sensing, " *IEEE Applied Imagery Pattern Recognition Workshop (AIPR)*, pp.1-4, 2015.