Xuewen Yao

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Summary

2nd-year PhD with deep learning and "big-noisy-data" experience looking for 2020 summer internship in research and development

Education

The University of Texas at Austin TX, USA — 08/2018 - 05/2023(Expected)
PhD in **Electrical and Computer Engineering**

Georgia Institute of Technology GA, USA — 08/2016 - 05/2018
M.S. in **Computer Science** — GPA: 3.7/4.0

City University of Hong Kong Hong Kong — 09/2012 - 07/2016
B.Eng. (Hons) in **Information Engineering** — GPA: 3.96/4.3
First-class honors

Selected Papers

Automated Detection of Infant Holding Using Wearable Sensing: Implications for Developmental Science And Intervention
Xuewen Yao, Thomas Plötz, McKensey Johnson, and Kaya de Barbaro.
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (June 2019)

Redesign of Gaussian Mixture Model for Efficient and Privacy-preserving Speaker Recognition
Yogachandran Rahulamathavan, **Xuewen Yao**, Rahulamathavan Sutharsini, Muttukrishnan Rajarajan and Kanapathippillai Cumanan
2018 International Conference on Cyber Situational Awareness, Data Analytics and Assessment

Internship & Research Experience

Graduate Research Assistant — 08/2018 - Present
The University of Texas at Austin, TX, USA
- Collected and cleaned 60 hours of home recording audio data
- Working on audio classification using deep neural nets
- Incorporating the idea of *individual differences* in feature engineering and modelling

Graduate Research Assistant — 08/2016 - 05/2018
Georgia Institute of Technology, GA, USA
- Worked on activity recognition using wearable motion sensors
- Soldered and compared the performance of multiple motion sensors
- Synchronized data from different sensors to a single platform, examined plots of raw data, video annotations and implemented feature engineering
- Detected patterns of proximity and physical contact and analyzed stress-related behaviors

Software Development Engineer Intern — 05/2017 - 07/2017
Amazon.com, WA, USA
- Worked with Amazon Search User Experience
- Used natural language processing to analyze user's queries and search history
- Developed an innovative model for recommendation
- Expected annual sales in US grow by 101.7 million dollars.

Junior Researcher — 06/2015 - 08/2015
City University London, UK
- Worked on privacy-preserving speaker verification and identification
- Self-studied and programmed MFCC (Mel-Frequency Cesptral Coefficients) and GMM (Gaussian Mixture Models) to achieve speaker verification in Matlab
- Implemented randomization on speaker verification and proved its feasibility

Selected Projects

Towards Understanding Regularization in Normalization Layers in Deep Neural Networks 01/2019 - 05/2019

- Compared the regularization effect of batch normalization, layer normalization, instance normalization, group normalization and dropout using Convolutional Neural Nets on CIFAR-10 dataset

Analysis of Diurnal and Seasonal Mood using Twitter Data 11/2017 - 12/2017

- Collected over 60GB of twitter data of year 2016
- Used VADER Sentiment Analysis to extract positive and negative affects from tweets
- Analyzed hourly diurnal mood change by day of the week
- Analyzed the relationship between mood change and number of friends/followers and device impact
- Calculated the top PMI words for morning/night (goo.gl/kkAZK7)

Planet: Understanding the Amazon from Space (Kaggle) 10/2017 - 12/2017

- Modified pre-trained ResNet, DenseNet and VGG to work with satellite image chips downloaded from Kaggle
- Labeled images with atmospheric conditions and various classes of land cover/land use with 90% accuracy using Amazon AWS and PyTorch

Artistic Imagery 01/2017 - 05/2017

- Replicated the work of *A Neural Algorithm of Artistic Style*
- Used ConvNets to separate and recombine content and style of arbitrary images to produce artistic images (TensorFlow)

Using Supervised Learning Techniques to win at Pokémon 09/2016 -12/2016

- Simulated and generated more than 1 million battle data using Java
- Evaluated the optimal team and each Pokemon's optimal move set in a given situation and its confidence using a variation of the Apriori Algorithm
- Results met expectations and similar to previous researches

Related Courses

Machine Learning, Artificial Intelligence, Computer Vision, Deep Learning, Reinforcement Learning, Data and Visual Analytics, Statistical Techniques in Robotics, Convex Optimization, Data Structures and Algorithms, Operating Systems, Database Systems, Data Communications and Networking, Cloud Computing Systems, Digital Signal Processing

Skills

Python (Tensorflow, PyTorch), Matlab, C/C++, Java, SQL, R

Teaching

CS6601 Artificial Intelligence Spring & Fall 2017, Spring 2018
Teaching Assistant with Prof. Thad Starner

Presentations

Is infant crying in the ear of the beholder: Examining the relationship between mothers' perceptions of daily infant crying and maternal depression
Megan Micheletti, **Xuewen Yao**, Mckensey Johnson, Sherryl Goodman, and Kaya de Barbaro
Conference of the Society for Ambulatory Assessment 2019

Automated Detection of Infant Holding and Carrying Behaviors via Body-Worn Motion Sensors
Xuewen Yao, Thomas Plötz, McKensey Johnson, and Kaya de Barbaro.
2019 Society for Research in Child Development Biennial Meeting

High-density markers of mother-infant bio-behavioral activity "in the wild": Developing a mobile-sensing paradigm to examine transmission of mental health risks
Kaya de Barbaro, **Xuewen Yao**, Beiwen Liu, Junqing Wang, Dominique Denbow, Alessandro Montanari, Geraint Jones, Nikki Newhouse, Aisling O'Kane, and Sherryl Goodman
Conference of the Society for Ambulatory Assessment 2017