Zelun Wang

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Education

Texas A&M University — **College Station**
Ph.D. Student in Computer Science, GPA 3.9/4.0 — *2014.09–current*

Xi'an Jiaotong University — **Xi'an**
B.Eng. in Automation, GPA 89.0/100 — *2010.09–2014.07*

Research Interests

- Machine Learning, Affective Computing, Computer Vision

Technical Skills

- **Language**: Java, C++, Python, Ruby, Javascript, Php
- **Tools**: Matlab, Android, Latex, Eagle Pcb, Hive, Mercurial, Git

Industry Experiences

Machine Learning Intern — *Facebook, Inc., 2018.06–2018.08*
- Developed a weighting schema for extracting features from location data which unified multiple data sources, reduced feature computation time, and simplified the Gradient Boosting Decision Tree model
- Analyzed and improved the crowdsourcing data pipeline

Professional Experiences

Research Assistant — *Texas A&M University, 2015.06–2018.09*
- Advised by Dr. Ricardo Gutierrez-Osuna
- Performed research on affective computing, biofeedback training, and chemical sensing

Teaching Assistant — *Texas A&M University, 2014.09–2015.05*
- Taught CSCE 121: Introduction to Program Design (C++)
- Instructed laboratory sessions for over 150 students

Undergraduate Research Assistant — *Xi'an Jiaotong University, 2013.06–2014.06*
- Instructed by Dr. Yihong Gong and Dr. Jinjun Wang
- Performed research on visual tracking in video sequences

Publications

- T Jin, J Zhou, **Z Wang**, R Gutierrez-Osuna, C Ahn, W Hwang, K Park, P Lin, "Real-Time Gas Mixture Analysis Using Mid-Infrared Membrane Microcavities", *Journal of Analytical Chemistry.* (2018)
- **Z Wang**, T Jin, P Lin, R Gutierrez-Osuna, "Mixture quantification in the presence of unknown interferences", *The International Symposium on Olfaction and Electronic Nose.* (2017)
- **Z Wang**, A Parnandi, R Gutierrez-Osuna, "BioPad: Leveraging Off-the-Shelf Video Games for Stress Self-Regulation", *Journal of Biomedical and Health Informatics.* (2017)
- C Liberatore, S Aryal, **Z Wang**, S Polsley, R Gutierrez-Osuna, "SABR: Sparse, Anchor-Based Representation of the Speech Signal", *Sixteenth Annual Conference of the International Speech Communication Association.* (2015)
- **Z Wang**, J Wang, S Zhang, Y Gong, "Visual Tracking based on Online Sparse Feature Learning", *Journal - Image and Vision Computing.* (2015)

- S Zhang, J Wang, **Z Wang**, Y Gong, Y Liu, "Multi-target tracking by learning local-to-global trajectory models", *Journal - Pattern Recognition*. (2014)

Research Projects

Pressure-Sensitive Mouse *Texas A&M University, 2017–2018*

- Designed a customized computer mouse with pressure sensors and micro-controller inside
- Designed a PC software for logging mouse activities and pressure values
- Designed an online Color Word Stroop test in Javascript
- Conducted a user study with 24 participants

Breath Components Analysis *Texas A&M University, 2016–2017*

- Implemented an active sensing algorithm to analyze the infrared spectrum of breath mixtures
- Inferred the concentrations of individual chemicals
- Designed a PCB on top of a Raspberry Pi to control the infrared sensors to collect spectrum data

Campus Parking Website Design *Texas A&M University, 2016*

- Developed an on-campus parking suggestion system based on Google Maps API
- Offered personalized information to users and made suggestions for most convenient parking places

Website Design for Texas Auctioneers Association *Texas A&M University, 2015*

- Developed a membership management website for the Texas Auctioneers Association
- Developed an linked database system based on MongoDB and Ruby on Rails
- Supported membership management, registration, etc.

Biofeedback Game Design *Texas A&M University, 2015*

- Developed a biofeedback tool to leverage off-the-shelf video games for biofeedback training
- Manipulated the game controller signals based on physiological data from wearable sensors
- Conducted a user study with 30 people on stress management training

Anchor-based Representation of the Voice Conversion *Texas A&M University, 2014*

- Decomposed the speech signal into speaker-dependent and speaker-independent components
- Used the centroid for each phoneme as an acoustic anchor
- Applied Lasso regularization to represent each speech frame as a sparse combination of the anchors
- Successfully converted the voice of a source speaker to a target speaker

Compressive Tracking based on Sparse Coding *Xi'an Jiaotong University, 2014*

- Extracted high dimensional Haar-like features from targets in video sequences
- Reduced feature dimension with sparse coding algorithm, and combined with color moments feature
- Trained an online Bayesian classifier, and scored the detections in the following frame for concise tracking

Multi-Target Tracking in Video Sequences *Xi'an Jiaotong University, 2013*

- Formulated the multi-target tracking task with a Markov Random Field model
- Implemented the Clear Mot evaluation tool
- Visualized the tracking results and tracking errors
- Applied post-treatment such as Kalman filter to trajectory models

Selected Awards

Outstanding Graduate Award:	*top 10% awarded*	*2014*
National Encouragement Scholarship:	*top 5% awarded*	*2013, 2012, 2011*
Outstanding Student Award:	*top 15% awarded*	*2013, 2012*
Outstanding Student Cadre Award:	*top 5 % awarded*	*2011*