

PENG-FEI TANG

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EDUCATION

Ph.D. student in Computer Science (Class 2016), [Emory University](#)

B.S. in Computer Science, [Zhejiang University](#), 2015

RESEARCH AREAS

- Machine Learning: Bayesian Inference.
- Deep Learning: Recurrent Neural Network, Generative Adversarial Network, Convolutional Neural Network, Adversarial Examples.
- Data Privacy: Private Information retrieval, Private Deep Learning.

COMPUTER SKILLS

C, C++, Python, Tensorflow, Java, Linux, MySQL, Matlab, PHP, Processing, HTML/CSS

RESEARCH/WORK EXPERIENCES

Ph.D. student in Computer Science, [Emory University](#), Atlanta, Georgia. Aug. 2016~
(Teaching Assistant, Aug. 2017~current; Part-time Technical Staff, Sep. 2016~Apr. 2017)

NIPS 2018: Adversarial Vision Challenge (on-going)

- Develop an untargeted attack model to generate adversarial examples, which can fool the classifier, e.g. CNN, to make wrong classification.
- Integrate the untargeted attack model into ensemble adversarial trainings to obtain both a well-performed attack model and a robust defense model.
- Work on Google Cloud GPUs to evaluate the performance of models.

Private Generative Adversarial Network (on-going)

- Develop a deep generative model, Generative Adversarial Network (GAN), to generate synthetic data, e.g., images.
- Apply privacy preserving techniques to the discriminator part of the GAN and make the generator part privacy-preserved.
- Utilize a large number of images to train the model and evaluate the accuracy and privacy of the synthetic images.

Privacy-preserving Information Retrieval Model

- Responsible for developing an efficient and privacy-preserving mechanism to update databases of moving objects.
- Built an information retrieval model for k-NN queries on moving objects

- Evaluated the model on both the synthetic data and real taxi data, and got a relatively low computation cost for the k-NN queries.

Recurrent Neural Network for predicting the Onset of Sepsis

- Responsible for constructing complex features of the model such as stacked neurons, bi-directional layers and the attention layer to improve the performance.
- Developed a deep neural network, recurrent neural network, to process the time-dependent health data and to predict the onset of certain disease such as Sepsis.
- Worked on the clusters to tune the hyper-parameters of the model and to evaluate the statistical performance, e.g., sensitivity and specialty, on the large scaled data.

Software Engineer, [Ctrip](#), the largest travel service company in China. Dec. 2015~Jul. 2016

- Worked in the development of the latest software deployment system to improve the deployment process on a large number of servers.
- Provided technique support for the software deployment system.

Software Engineer, Gebo LLC, Shanghai, China.

Jul. 2015~Nov.2015

- Developed an email system with contact management and databases.

Undergraduate in Computer Science, [Zhejiang University](#), China Sep. 2011~Jul. 2015

Undergraduate Design in Advanced Computing and System Lab

- Responsible for applying the object classification and 3D coordinates positioning techniques to the application.
- Developed an application for robot arm grasping system based on the object detection and Kinect device. The final performance showed that the robot arm driven by the application could perfectly grasp the real object, e.g., apple.

Campus BBS Emotion Analysis Software by Data-Visualization

- Developed data visualization tools for human emotion using Processing and Java.
- Applied the 3D display and keywords matching approaches to the model.

MiniSQL – a mini database system design

- Developed a mini database system with the functions of Create, Query, Insert, Delete, syntax error detection, file read-and-write.
- Developed the B^+ tree for indexing data blocks and thus the database could efficiently fetch data from disk.

AWARDS AND ACCOMPLISHMENTS

- Outstanding Student Award, Zhejiang University, 2012
- Annual Scholarship Award, Zhejiang University, 2012
- Third Place, Zhejiang Province College Students Physics Competition, 2012