Yunyu Liu

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EDUCATION

09/2018 – 05/2020 **Northeastern University (NEU), Boston, USA**
Master of Science, *Major: Computer Engineering, GPA: 3.78*

09/2014 – 07/2018 **Shanghai Jiao Tong University (SJTU), Shanghai China**
Bachelor of Engineering *Major: Electrical Engineering, GPA: 3.40*
Minor: Finance, GPA: 3.57

PUBLICATIONS & POSTERS

07/2020 **Yunyu Liu**, Lichen Wang, Yue Bai, Can Qin, Zhengming Ding, Yun Fu, "Generative View-Correlation Adaptation for Semi-Supervised Multi-View Learning," 16th European Conference On Computer Vision (ECCV 2020)

11/2019 Lichen Wang, **Yunyu Liu**, Can Qin, Gan Sun, Yun Fu, "Dual Relation Semi-supervised Multi-label Learning," Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2020)

08/2019 Lichen Wang, Zhengming Ding, Zhiqiang Tao, **Yunyu Liu**, Yun Fu, "Generative Multi-View Human Action Recognition," International Conference on Computer Vision (ICCV 2019) (Oral)

08/2019 Zhiyang Xia, Ping Yi, **Yunyu Liu**, Bo Jiang, Tiantian Xie, Wei Wang, "GENPass: A Multi-Source Deep Learning Model For Password Guessing," IEEE Transactions on Multimedia (TMM)

05/2018 **Yunyu Liu**, Zhiyang Xia, Ping Yi, Wei Wang, Yao Yao, Ting Zhu, Tiantian Xie, "GENPass: A General Deep Learning Model for Password Guessing with PCFG Rules and Adversarial Generation," IEEE International Conference on Communications (ICC 2018)

09/2017 Zhiyang Xia, **Yunyu Liu**, Ping Yi, "Password guess and analyze based on recurrent neural network," The 10th Conference on Vulnerability Analysis and Risk Assessment (VARA 2017)

SCIENTIFIC RESEARCH EXPERIENCE

Northeastern University, Synergetic Media Learning Lab, **Oct 2018 - now**
Supervisor: Associate Prof. Yun Raymond Fu

Analyzed the EMG Signals

- Preprocessed the EMG signals using Fourier Transform.
- Employed a LSTM to classifier the EMG signals.

Multi-view Learning

- Utilized TSN and WDMM to extract features from RGB graph and depth graph.
- Employed Generative models to fully explore multi-view information.
- Proposed a graph-based method to do the label-level fusion.

Semi-supervised Multi-View Learning

- Adapted domain adaptation methods to the multi-view learning.
- Employed Graph knowledge to help learning the representation.
- Utilized information entropy to help the fusion.

Shanghai Jiao Tong University, IIoT Research Center, Acemap, **Jun 2017 - Jun 2018**
Supervisor: Prof. Xinbing Wang, Post-Doctor Luoyi Fu

Analyzed the relationship of topics and authors

- Learned k-core and d-core (an algorithm extended k-core to directed graph).
- Designed an algorithm to create a directed graph depicting different topics in the Academic Network.
- Used k-core algorithm, d-core algorithm and the directed graph to analyze the topics.
- Used Gephi and javascript to visualize the relationship between different topics.
- Analyzed the relationships of topics and authors.

Shanghai Jiao Tong University, Wireless Network Attack and Defense Laboratory, Sep 2016 – Jun 2018
Supervisor: Prof. Ping Yi
Password cracking using deep learning

- Used Suffix Automaton(SAM), Aho-Corasick algorithm (AC Automaton) to analyze the passwords leaked from Chinese and English language environments.
- Compared the performances of three different models BasicRNN, Long Short-Term Memory (LSTM) and Gated Recurrent Unit(GRU) on dictionary attack.
- Combined LSTM and Probabilistic Context Free Grammar(PCFG) models to create a more effective password guessing model, which had a better performance than both LSTM and PCFG under the same circumstance.
- Implemented the idea of Generative Adversarial Net(GAN) and created a general model (GENPass). GENPass learns from different datasets to generate a general wordlist which keeps a high matching rate in all datasets.

Shanghai Jiao Tong University, Undergraduate Innovation Project, Dec 2015 - Dec 2016
Supervisor: Prof. Ping Yi
Designed an algorithm to detect and locate evil APs in the wireless network (using Linux, C)

- Researched and developed a detection algorithm in a small network based on MMSDU and a location algorithm based on the signal strength; a detection algorithm in a large network based on TTL.
- Designed and accomplished an Android client for the large network (Android Studio).

WORKING EXPERIENCE

Shanghai LiveSine Corporation, Jul 2016 - Sep 2016
Supervisor: Prof. Chunyu Zhao
Position: Internship, R&D
Developed a Data Transfer Unit(DTU) with Bluetooth

- Designed and built a DTU with Bluetooth.
- Designed an APP which can communicate with the DTU by Bluetooth and with the server by TCP/IP (using Delphi).
- Made sure that the communication will not be influenced by the electromagnetic field created by the strong direct current.
- Designed the communication protocol.
- Interpreted the data from DTU and showed them in a friendly user interface.