Yunyu Liu

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EDUCATION

09/2018 – Present **Northeastern University (NEU), Boston, USA**
Master of Science, *Major: Computer Engineering, GPA: 3.67*

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

PUBLICATIONS & POSTERS

10/2019 Yue Bai, Lichen Wang, **Yunyu Liu**, Yu Yin, Yun Fu, "Long-Short Dual-Side AutoEncoder for Human Motion Segmentation," 15th IEEE International Conference On Automatic Face And Gesture Recognition (FG 2020) (Under Review)

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)

SKILLS

Operation System: Linux (Ubuntu), Windows.
Language: Python, C/C++.
Software: Tensorflow, Anaconda, CCS, etc.

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.