I-Ta Lee

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EDUCATION

PhD's Degree of Science in Computer Science **August 2015 - present**

Purdue Natural Language Processing Laboratory, Purdue University, USA

- Deep Learning and Natural Language Processing
- Event Embeddings, Common Sense Modeling, Narrative Scripts

Master's Degree of Science in Computer Science, GPA: 4.0 / 4.0 **September 2008 - June 2010**

Wireless Mobile Networking Laboratory, National Tsing Hua University, Hsinchu, Taiwan

- **Master Thesis**: A Cooperative Multicast Routing Protocol for Mobile Ad Hoc Networks

Bachelor's Degree of Science, Computer Science, GPA: 3.96 / 4.0 **September 2004 - June 2008**

Yuan Ze University, Taoyuan, Taiwan

WORK EXPERIENCE

Research Intern **May 2017 - August 2017**

Hewlett Packard Enterprise, Sunnyvale, CA (ArcSight, Previous HP Lab team)

- Threat detection in netflow data using LSTM with Attention in Tensorflow.

Senior Software Engineer **October 2013 - September 2014**

Trend Micro Inc.—A Global Leader in IT Security, Taiwan

- Mainly use C++ in Visual Studio to develop core modules of Advanced Persistent Threat solutions.

Senior Software Engineer **October 2010 - September 2013**

Moxa Inc.—A World-Class Company in Industrial Automation, Taiwan

- Served as main developer of the first Moxa Zigbee embedded network device. The products are available worldwide.
- Designed a ZigBee application protocol that improved network capacity by 100%. This development has been nominated for an annual R&D award and the design has been presented to 400 engineers.
- In a STREAMS-based MoxaOS, implemented RFC standardized protocol modules, including IGMPv3, LLDP, RIPv2.
- Maintained UART drivers on Linux/Windows.

ACADEMIC EXPERIENCE

Research and Teaching Assistant, *Purdue University* **Aug 2015 – Present**

- Deep Learning, Object-Orient Programming in Java, C Programming

Research Assistant, *Academia Sinica, Natural Language Processing Lab* **January 2015 – July 2015**

- Deep/Machine Learning for Natural Language Processing

Research Assistant, *National Tsing Hua University, National Science Council,* **2009 - 2010**

- *National Networked Communications Program*: Air Pollution Sensing System in Vehicular Ad Hoc Networks

Teaching Assistant, *National Tsing Hua University* **2009 - 2010**

- Mobile Telecommunication Networks, graduate-level

TECHNICAL SKILLS

Expertise

- Design machine learning models to solve problems in Natural Language Processing
- Build semantic representations for different application fields, e.g., word/event embeddings, outlier detections

Past Expertise

- Embedded systems, Windows/Linux system programming Linux/Windows device drivers
- TCP/IP, ZigBee, Ad Hoc Networks, socket programming

Programming

- Proficient in C/C++, Python, Java

- Familiar with Git, Batch Script, Shell Script, and Makefile

PUBLICATIONS

Conference and Workshop Papers

- I-Ta Lee, and Dan Goldwasser, "FEEL: Featured Event Embedding Learning," *AAAI (2018)*
- Kristen Johnson, I-Ta Lee, and Dan Goldwasser, "Ideological Phrase Indicators for Classification of Political Discourse Framing on Twitter," *NLP+CSS (2017)*
- I-Ta Lee, et al., "PurdueNLP at SemEval-2017 task 1: Predicting Semantic Textual Similarity with Paraphrase and Event Embeddings," *Proc. Of SemEval (2017)*
- Maria L. Pacheco, I-Ta Lee, Xiao Zhang, A. K. Zehady, P. Daga, Di Jin, A. Parolia, and D. Goldwasser, "Adapting Event Embeddings for Implicit Discourse Relation Recognition," *CONLL (2016)*
- I-Ta Lee, Tzu-Yi Lin, Yu-Lu Liu and Tein-Yaw Chung, "A Design and Implementation of an iSCSI-based Wireless Remote Video Storage System," *National Computer Symposium (2007)*

Journal Papers

- I-Ta Lee, Guann-Long Chiou, and Shun-Ren Yang, "A Cooperative Multicast Routing Protocol for Mobile Ad Hoc Networks," *Elsevier Journal of Computer Networks*, Volume 55, Issue 10, 14 July 2011, pp. 2407–2424.

PROJECTS

FEEL: Featured Event Embedding Learning (https://goo.gl/MQpD2G) **Feb. 2018**
Purdue NLP Lab @AAAI 18' (Oral Presentation)

- A general model that can embed features into event embeddings

Feature Learning for Security Data (https://goo.gl/T5oSAQ) **August 2017**
Research Intern @Hewlett Packard Enterprise

- Threat detection in netflow data using LSTM with attention

Predicting Semantic Textual Similarity with Paraphrase and Event Embeddings (https://goo.gl/iaKdfY) **August 2017**
PurdueNLP @SemEval 17', Vancouver, Canada

- Learning paraphrase embeddings with DSSM-like convolutional neural networks and skip-gram event embeddeings.

Adapting Event Embeddings for Implicit Discourse Relation Recognition (http://goo.gl/ATc279) **August 2016**
PurdueNLP Lab @CoNLL 16', Berlin, Germany

- The proposed event embeddings improve implicit discourse relation classifications

Deep Discovery Endpoint Sensor 1.0 (http://goo.gl/R5a9pR) **2014**
Trend Micro Inc. @Taiwan

- A large-scale C++-based software for threat detection, based on YARA—an open-source memory scan and hook solution.

ZigBee Network Gateway and Converter (http://goo.gl/7I1kCX) **2013**
Moxa Inc. @Taiwan

- A series of embedded devices implemented by using C language on two real-time operating systems.

Air Pollution Sensing System in Vehicular Ad Hoc Network (http://goo.gl/yDPezC) **2010**
National Tsing Hua University, National Networked Communications Program

- Led a team to implement a client-server architecture to collect air quality sensor data from vehicles.

A Malicious Message Filter on MSN Live Messenger (http://goo.gl/Dnhukk) **2007**
Yuan Ze University, Web Information Mining and Retrieval

- Filter malicious messages based on the Naïve Bayes classifier in an instant messaging client.

HONORS

Awards and Scholarships

- Scholarship from AAAI 2018 **2018**
- Presidential Awards from Yuan Ze University (x4) (ranked 1/126 each year) **2005 - 2008**
- Honorary Member of the Phi Tau Phi Scholastic Honor Society **2010**
- Certificate of Outstanding Achievement in IEEE Yuan Ze University Student Branch **2007**
- Scholarship from Yuan Ze University for Great Academic Achievement (x3) **2005 - 2007**
- Scholarship from Inventec Appliances OKWAP for Great Academic Achievement **2007**
- Scholarship from LiMing Corporation for Great Academic Achievement (x3) **2007 - 2009**

- Scholarship from the Taipei Zhung Zhen Foundation (x2) **2007 - 2008**