Zhengzhong Liang

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ECE Department, The University of Arizona
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EDUCATION

Bachelor of Engineering, Electrical Engineering and Automation, 2011.09-2015.06
Shandong University, Ji'nan, Shandong, China
GPA: 84.36/100

Master of Science, Electrical and Computer Engineering, 2016.08-2018.05
The University of Arizona, Tucson, AZ, USA
GPA: 4.0/4.0

STANDARD TEST

GRE: Verbal 158, Quantitative 170, Writing 4.0
TOEFL: 109 (Reading 30, Listening 26, Speaking 24, Writing 29)

RESEARCH EXPERIENCE

Research Assistant 2015.01-2015.05
Laboratory of Advanced Protection Scheme for Power Grid, Shandong University

- Analyzed the fault-current in the network when a phase-to-ground fault occurred in the typical 20-kV distribution power grid with 3-core cables.
- Derived the theoretical expression of fault-current in such network and verified it by simulation using PSCAD.

Research Assistant 2017.01-2017.08
Laboratory for Information Processing Systems, The University of Arizona

- Built an image classifier consisting of Spiking Neural Network (SNN) and Spike-Timing Dependent Plasticity (STDP), emulating human's visual system.
- Derived a new synapse-strength normalization rule in such network; Tested the performance of network in different combinations of STDP learning windows, normalization rules and encoding/decoding scheme.

Research Assistant 2017.08-2017.12
Machine Learning and Data Analytics Laboratory, The University of Arizona

- Implemented an Long-Short Term Memory (LSTM) network in TensorFlow and used it in brain-tumor classification problem.
- Conducted Experiments about the performance of an LSTM network in a natural language processing (NLP) problem where the training text is poisoned by the text from another dataset.
- Tested the code on both local GPU (1×GTX950 GPU) and Elgato's (a supercomputer cluster of The University of Arizona) GPU (2×Tesla K20X GPU).

Research Participant 2017.01-2017.04
Computational and Experimental Neuroscience Laboratory, The University of Arizona.

- Conducted experiments about place cells in Hippocampus using Yale's simulator NEURON.
- Studied the navigation accuracy when the size of the place cell changed.

PUBLICATIONS

Published Innovative Smart Grid Technologies - Asia (ISGT ASIA), 2015 IEEE
Analysis of earth currents in a medium-voltage distribution network with three-core cables

In Preparation 2017.12
The Impact of Encoding-Decoding Schemes and Weight Normalization in Spiking Neural Networks

In Preparation 2017.12
Modeling Brain Tumor Growth and Parameterization with Recurrent Neural Networks

TEACHING EXPERIENCE

Teaching Assistant, Linear Algebra (ECE310) 2016.08-2017.05
- Prepare and conduct lab session about he use of MATLAB

Teaching Assistant, Digital Logic (ECE274) 2017.08-2017.12
- Help students with debugging FPGA program.

AWARDS AND HONOURS

Graduate Teaching Assistantship. 2017.08
Graduate Teaching Assistantship. 2016.08
Successful Participant, Mathematical Contest in Modelling. 2014.04
Third Prize, "Electrician Cup" National Undergraduate Mathematical Contest in Modelling. 2013.12
First Prize of Shandong Division, National Mathematical Contest in Modelling for Undergraduates. 2013.10
Scholarship, sponsored by AirTac Co., Ltd. 2013.10
Outstanding Volunteer of EE Department of Shandong University. 2012.12
Scholarship, sponsored by Changyuan Group Ltd. 2012.10

SKILLS

Programming Language: C/C++, C#, Python, Javascript, Verilog.
Environment: TensorFlow (GPU), MPI, OpenMP, CUDA, Linux, MATLAB, Bash, NEURON, PSCAD.
Document: LATEX, Inkscape, Microsoft Office.