Yuchen Yang

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EDUCATION

University of Illinois at Urbana-Champaign   *August 2021 - Present*
Bachelor of Computer Engineering
- GPA *3.95*

Zhejiang University   *August 2021 - Present*
Bachelor of Electronic and Computer Engineering
- GPA *3.95*

EXPERIENCE

University of Illinois at Urbana-Champaign   *September 2023 - Present*
Research Assistant, Advised by Prof. Sasa Misailovic and Prof. Gagandeep Singh
Topic: Efficient machine learning system for Certifiably robust models.

ZJU-UIUC Institute   *May 2023 – September 2024*
Research Assistant, Advised by Prof. Aili Wang
Topic: Efficient Artificial Neural Networks (ANNs) to Spiking Neural Networks (SNNs) conversion method.

PUBLICATIONS

ARQ: A Mixed-Precision Quantization Framework for Accurate and Certifiably Robust DNNs
- **Yuchen Yang**, Shubham Ugare, Yifan Zhao, Gagandeep Singh, Sasa Misailovic.
- A mixed-precision quantization approach that optimizes for the accuracy and certified robustness of DNNs.
- Utilizes reinforcement learning with randomized smoothing to achieve certifiably robust quantized networks.
- Achieves or surpasses the original FP32 network accuracy and robustness with only 1.5% operations.
- Submitted to The Thirteenth International Conference on Learning Representations.

NeuBridge: Bridging Quantized Activations and Spiking Neurons for ANN-SNN Conversion
- **Yuchen Yang***, Jingcheng Liu*, Chengting Yu, Chengyi Yang, Gaoang Wang, Aili Wang. (*equal contribution)
- An ANN-SNN conversion method using temporal coding to reduce timesteps without losing accuracy.
- Demonstrates superior accuracy and efficiency over SOTA methods on CIFAR-10 and ImageNet, achieving high performance in just two timesteps.
- Submitted to IEEE Transactions on Artificial Intelligence.

SELECTED AWARDS AND HONORS

- **Dean's List** | *University of Illinois at Urbana-Champaign*   *2024*
- **Excellence Studying Scholarship** | *Zhejiang University*   *2022 & 2023*