Chenxi Yang

CONTACT
INFORMATION

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EDUCATION

The University of Texas at Austin   *Sep. 2019 - present*
Ph.D. in Computer Science
Advisor: Prof. Swarat Chaudhuri

Fudan University   *Sep. 2015 - Jun. 2019*
B.Sc in Computer Science, *Honor Program*
Cumulative GPA: **3.62** / 4.0, Ranking: **6** / 111

The University of Hong Kong   *Aug. 2017 - Dec. 2017*
Exchange Program

PUBLICATIONS

- *Safe Neurosymbolic Learning with Differentiable Symbolic Execution.*
  Chenxi Yang, Swarat Chaudhuri.
  In Submission to ICLR (Current Score: 6/8/6).

- *Scheduling DNNs on Edge Servers.*
  Jian He, **Chenxi Yang**, Zhaoyuan He, Ghufran Baig, Lili Qiu.
  In Submission.

- *Sensing Peoples Time Management Activities: A Study Using Wearable Devices.*
  Chenxi Yang, Yang Chen, Yuan Xuan.
  SenSys 2018, Poster Session.

- *Understanding the Behavioral Differences Between American and German Users: A Data-Driven Study.* [Paper]
  Chenxi Yang, Yang Chen, Qingyuan Gong, Xinlei He, Yu Xiao, Yuhuan Huang, Xiaoming Fu.
  Big Data Mining and Analytics 2018

- *Accelerating Mobile Applications at the Network Edge with Software-Programmable FPGAs.* [Paper]
  Shuang Jiang, Dong He, **Chenxi Yang**, Chenren Xu, Guojie Luo, Yang Chen, Yunlu Liu, Jiangwei Jiang.
  INFOCOM 2018

SELECTED
RESEARCH
EXPERIENCE

Safe Neurosymbolic Learning with Differentiable Symbolic Execution
Advised by Prof. Swarat Chaudhuri, UT-Austin   *Jun. 2020 - present*
- Presented the first approach to worst-case-safe parameter learning for neural networks embedded within nondifferentiable, symbolic programs.
- Gave a new way to bring together symbolic execution and stochastic gradient estimators that might have applications in autonomous driving, crital health care, etc.
- Exhibited experimental results that indicate the advantages of this method over the state-of-the-art in verified learning.

RNA Splicing Interpretation with Neurosymbolic Models
with the Neurosymbolic RNA Splicing Team   *Sep. 2020 - present*
- Joint work with collaborators from UT-Austin, MIT and UPenn.
- Presented an interpretable model with differentiable programmatic structure for RNA splicing prediction and extracted important patterns for RNA splicing.
- Designed and implemented a synthetic mechanism to test the interpretability of neurosymbolic models in the domain where ground-truth interpretation is unknown.

Edge Server DNN Processing Acceleration
Advised by Prof. Lili Qiu, UT-Austin   *Sep. 2019 - Jun. 2020*

- Designed a batching-aware DNN scheduling algorithm to efficiently support requests running the same DNN.
- Enabled collaborative DNN execution at the client side to speed up processing.
- Presented a system on commodity hardware to demonstrate the algorithm's effectiveness for video analysis.

Sensing Peoples Time Management Behaviors Based on Wearable Devices

Advised by Prof. Yang Chen, Fudan University   *Jun. 2018 - Apr. 2019*

- Implemented a novel application for time management based on wearable devices.
- Presented the first attempt to collect and analyze users patterns about using smartphones, and allowed a collective understanding of users task completion rate and how users' task engagement is influenced by smartphones and other external factors.
- Designed an one minute online survey to study potential factors, covering 93 participants. The results showed that the category of application has the greatest impact, followed by the progress of the current task and location.

FPGA-based Edge Computing for Accelerating Mobile Applications

Advised by Prof. Chenren Xu, Peking University   *Jul. 2017 - Aug. 2017*

- Combined the advantages of edge offloading and FPGA-based computational acceleration, designed and built an FPGA-based edge computing model.
- Designed a proof-of-concept FPGA-based edge computing system, and performed the experiments in a case study using three CV-based interactive applications.
- Showcased that the FPGA-based edge computing system reduced the response time and execution time by up to 3x and 15x respectively over CPU-based edge/cloud offloading. And our system achieved up to 29.5% and 16.2% energy efficiency on mobile device and edge nodes respectively.

INTERNSHIP
EXPERIENCE

Goldman Sachs Asia L.L.C

Technology Summer Analyst   *Jun. 2018 - Aug. 2018*

- Worked at *Goldman Sachs Electronic Trading* (GSET) Team.
- Designed and implemented automatically filling-in timesheet in the firm.
- Built a workload generation tool, which simulated the procedure of trading orders flowing through the OSI layers for testing the new generation ultra low latency DMA trading gateway. The tool spotted real bugs in the system development.

PROFESSIONAL
SERVICE

Teaching Experiences

- Teaching Assistant of CS 373 Software Engineering   *Fall 2019, Spring 2020*

Reviewer of the following conferences

- Neurips AIPLANS'21
- ACM HT'18
- ICC'18
- GLOBECOM'17

AWARDS &
HONORS

- Outstanding Graduate, Shanghai Region   *2019*
- Meritorious Winner, Mathematical Contest in Modeling   *2018*
- Chinese National Scholarship   *2017*
- First Prize, Honor Program Scholarship of Computer Science   *2017*
- Fung Scholarship, The University of Hong Kong   *2017*

PROFESSIONAL
SKILLS

- Python, C/C++, Java, ...
- SQL, LATEX, Git, Gnuplot, Qt, Android, ...
- PyTorch, Tensorflow, ...