Cheng Tan

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PROFESSIONAL EXPERIENCE

Northeastern University, Khoury College of Computer Sciences — Boston, MA
Assistant Professor — Aug 2021 – Present

ByteDance Inc, AI Lab — Bellevue, WA
Research Scientist — Oct 2020 – Aug 2021

EDUCATION

New York University — New York, NY
Ph.D. in Computer Science — Sep 2014 – Aug 2020
  Dissertation: "Auditing Outsourced Services"
  Advisor: Michael Walfish

Fudan University — Shanghai, China
M.S. in Software Engineering — Sep 2011 – Jun 2014
  Advisor: Haibo Chen and Binyu Zang

Nanjing University — Nanjing, China
B.E. in Software Engineering — Sep 2007 – Jun 2011

PUBLICATIONS

[9] Mingyu Li, Xuyang Zhao, Le Chen, **Cheng Tan**, Huorong Li, Sheng Wang, Zeyu Mi, Yubin Xia, Feifei Li, and Haibo Chen. *Encrypted Databases Made Secure Yet Maintainable.* USENIX Symposium on Operating Systems Design and Implementation (**OSDI 2023**).

[8] Tianhao Wei, Zhihao Jia, Changliu Liu, and **Cheng Tan**. *Building Verified Neural Networks for Computer Systems with Ouroboros.* European Conference on Computer Systems Conference on Machine Learning and Systems (**MLSys 2023**).

[7] Jian Zhang, Ye Ji, Shuai Mu, and **Cheng Tan**. *Viper: A Fast Snapshot Isolation Checker.* European Conference on Computer Systems (**EuroSys 2023**).

[6] Jiawei Liu, Jinkun Lin, Fabian Ruffy, **Cheng Tan**, Jinyang Li, Aurojit Panda, and Lingming Zhang. *NNSmith: Generating Diverse and Valid Test Cases for Deep Learning Compilers.* 28th International Conference on Architectural Support for Programming Languages and Operating Systems (**ASPLOS 2023**).

[5] Mingyu Li, Jinhao Zhu, Tianxu Zhang, **Cheng Tan**, Yubin Xia, Sebastian Angel, and Haibo Chen. *Bringing Decentralized Search to Decentralized Services.* 15th USENIX Symposium on Operating Systems Design and Implementation (**OSDI 2021**).

[4] **Cheng Tan**, Changgeng Zhao, Shuai Mu, and Michael Walfish. *Cobra: Making Transactional Key-Value Stores Verifiably Serializable.* 14th USENIX Symposium on Operating Systems Design and Implementation (**OSDI 2020**).

[3] **Cheng Tan**, Ze Jin, Chuanxiong Guo, Tianrong Zhang, Haitao Wu, Karl Deng, Dongming Bi, and Dong Xiang. *NetBouncer: Active Device and Link Failure Localization in Data Center Networks.* 16th Symposium on Networked Systems Design and Implementation (**NSDI 2019**).

[2] **Cheng Tan**, Lingfan Yu, Joshua B. Leners, and Michael Walfish. *The Efficient Server Audit Problem, Deduplicated Re-execution, and the Web.* 26th Symposium on Operating Systems Principles (**SOSP 2017, Best paper award**).

[1] Yubin Xia, Yutao Liu, **Cheng Tan**, Mingyang Ma, Haibing Guan, Binyu Zang, and Haibo Chen. *TinMan: Eliminating Confidential Mobile Data Exposure with Security-oriented Offloading.* 10th European Conference on Computer Systems (**EuroSys 2015**).

Honors and awards

2023	NSF CAREER Award
2020	Janet Fabri Prize for Outstanding Dissertation, Courant Institute
2017	SOSP Best Paper
2014	MacCracken Fellowship, NYU

Teaching experience

Seminar: Neural Networks for Systems (CS7670)   Fall 2022
Instructor   Northeastern University

Computer Systems (CS5600)   Fall 2021, Spring 2022, Spring 2023
Instructor   Northeastern University

Invited and conference talks

Ouroboros: Building Verified NN4Sys   June 2023
Conference talk at MLSys

Verifying the Isolation levels of Databases Unilaterally   Oct 2022
Short talk at New England Systems Verification Day

Constructing Certified Neural Networks for Computer Systems   Aug 2022
Seminar talk at Data Lab at Northeastern

Characterizing Neural Network Verification for Systems With NN4SysBench   July 2022
Workshop talk at WFVML

Snapshot Isolation Made Easy (to Check and to Understand)   July 2022
Invited talk at Cockroach Labs

Snapshot Isolation Made Easy (to Check and to Understand)   June 2022
Invited talk at DatenLord Inc.

Constructing Certified Neural Networks for Computer Systems   Feb 2022
Invited talk at Boston University, CISE Seminar Series

Constructing Certified Neural Networks for Computer Systems   Nov 2021
Seminar talk at Northeastern Systems Research Group Seminar

Serving DNN Models at Scale with Multi-Instance GPUs   April 2021
Invited talk at AML Seminar at ByteDance

Cobra: Making Transactional Key-Value Stores Verifiably Serializable.   Nov 2020
Conference talk at OSDI

NetBouncer: Active Device and Link Failure Localization in Data Center Networks.   Feb 2019
Conference talk at NSDI