

LISHAN YANG

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Department of Computer Science
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RESEARCH INTERESTS

- Reliable operation of GPUs, non-conventional sensors, autonomous driving systems, and neural networks
- GPU architecture
- Software engineering efforts to accelerate reliability and system research process

EDUCATION

Ph.D. in Computer Science

June 2022

Department of Computer Science
William & Mary, Williamsburg, VA

- Advisor: Prof. Evgenia Smirni
- Dissertation Title: Practical GPGPU Application Resilience Estimation and Fortification

B.E. in Computer Science

June 2016

School of Computer Science and Technology
University of Science and Technology of China (USTC), Hefei, China

- Advisor: Prof. Bei Hua

PUBLICATIONS

A. Schmedding, **L. Yang**, R. Pincioli, E. Smirni, “GeoSpread: an Epidemic Spread Modeling Tool for COVID-19 Using Mobility Data”, ACM International Conference on Information Technology for Social Good (GoodIT) 2022, to appear

X. Zhou, A. Schmedding, H. Ren, **L. Yang**, P. Schowitz, E. Smirni, H. Alemzadeh, “Strategic Safety-Critical Attacks Against an Advanced Driver Assistance System”, 52th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), Practice Experience Report

R. Pincioli, **L. Yang**, J. Alter, E. Smirni, “Lifespan and Failures of SSDs and HDDs: Similarities, Differences, and Prediction Models”, IEEE Transactions on Dependable and Secure Computing (TDSC), to appear in 2022

L. Yang, B. Nie, A. Jog, E. Smirni, “SUGAR: Speeding Up GPGPU Application Resilience Estimation with Input Sizing”, Proceedings of the ACM on Measurement and Analysis of Computing Systems (Sigmetrics) 2021, no. 1: 1-29. (Acceptance Rate: 12%) [PDF] [Video] [Slides]

L. Yang, B. Nie, A. Jog, E. Smirni, “Enabling Software Resilience in GPGPU Applications via Partial Thread Protection”, IEEE/ACM 43rd International Conference on Software Engineering (ICSE) 2021: pp. 1248-1259. (Acceptance Rate: 22%) [PDF] [Video] [Slides]

L. Yang, B. Nie, A. Jog, E. Smirni, “Practical Resilience Analysis of GPGPU Applications in the Presence of Single- and Multi-bit Faults”, IEEE Transactions on Computers, vol. 70, no. 1, pp. 30-44, 1 Jan. 2021. [PDF]

B. Nie, **L. Yang**, A. Jog, E. Smirni, “Fault Site Pruning for Practical Reliability Analysis of GPGPU Applications”, 51st Annual IEEE/ACM International Symposium on Microarchitecture (MICRO) 2018: pp. 749-761. (Acceptance Rate: 21%) [PDF] [Slides]

K. Zhang, B. He, J. Hu, Z. Wang, B. Hua, J. Meng, **L. Yang**, “G-NET: Effective GPU Sharing in NFV Systems”, 15th USENIX Symposium on Networked Systems Design and Implementation (NSDI) 2018: pp. 187-200. (Acceptance Rate: 16%) [PDF]

L. Yang, L. Cherkasova, R. Badgujar, J. Blancaflor, R. Konde, J. Mills, E. Smirni, “Evaluating Scalability and Performance of a Security Management Solution in Large Virtualized Environments”, Proceedings of the 2018 ACM/SPEC International Conference on Performance Engineering (ICPE): pp. 168-175. [PDF] [Slides]

Refereed Posters

L. Yang, “Typhoon: Enabling GPGPU Application Resilience Estimation with Different Input Types”, ACM Sigmetrics Student Research Competition (SRC) 2021

L. Yang, A. Schmedding, R. Pincioli, E. Smirni, “Simulating COVID-19 Containment Measures Using the South Korean Patient Data”, Sensys 2020, COVID-19 Pandemic Research Poster Session.

PROFESSIONAL EXPERIENCE

Assistant Professor August 2022 - Present
Department of Computer Science, George Mason University, Fairfax, VA

Research Assistant August 2017 - June 2022
Department of Computer Science, College of William & Mary, Williamsburg, VA

Teaching Assistant August 2016 - May 2018
Department of Computer Science, William & Mary, Williamsburg, VA

- Computer Organization, Network Systems and Design, Simulation, Introduction to Cryptography

Software Engineering Intern May 2021 - August 2021
Facebook Inc, Menlo Park, CA

Reliability Intern June 2019 - October 2019
IBM Corporation, Austin, TX

Attendee in ACACES Summer School July 2018
Fiuggi, Italy

Software Engineering Intern May 2017 - August 2017
Hytrust Inc, Mountain View, CA

TEACHING

- CS475 Concurrent & Distributed Systems, 2022 Fall

AWARDS

- W&M CS Graduate Park Award, 2022

- Student Travel Grant for DSN, 2022
- W&M International Student Opportunity Scholarship , 2021
- vGHC Students and Faculty Scholarship, 2021
- Student Travel Grant for MICRO, ICPE, and NSDI, 2018
- W&M OGSR Research Grant, 2018
- W&M Student Leadership Grant, 2018
- W&M CS Student Travel Grant, 2018
- Active Member in Social Practice, USTC, 2015
- Excellent Student Cadre, USTC, 2014
- Outstanding League Member, USTC, 2013
- Tenth Yang Ya Scholarship, USTC, 2013
- Second Prize in Essay Competition, USTC, 2013

SERVICE

- Program Committees, IPDPS 2023
- Organizing Committees, Sigmetrics 2023 (Publicity Chair)
- Session Chair & Poster Judge, ACM Capital Region Celebration of Women in Computing (CAPWIC) 2021 and 2022
- Sub-reviewer of Sigmetrics 2022, DSN 2022, DSN 2021, Sigmetrics 2021, Sigmetrics 2020, Performance 2020, ICPE 2020, Sigmetrics 2019, DSN 2019
- Member of WHPC-Virginia (Women in High Performance Computing in Virginia) and SWC-WM (Society of Women in Computing in William & Mary)
- Volunteer, HPDC 2019 Program Committee Meeting
- Mentor, HackViolet 2022

REFERENCES

- **Evgenia Smirni**, Sidney P. Chockley Professor, William & Mary. esmirni@cs.wm.edu
- **Adwait Jog**, Adina Allen Associate Professor, William & Mary. ajog@wm.edu
- **Dimitris Gizopoulos**, Professor, University of Athens. dgizop@di.uoa.gr
- **Yifan Sun**, Assistant Professor, William & Mary. ysun25@wm.edu