TEXAS STATE VITA

I. Academic/Professional Background

A. Name and Title

Name: Dr. Kecheng Yang Title: Program Faculty

B. Educational Background

Degree	*Year*	*University*	*Major*	*Thesis/Dissertation*
PHD	2018	Univ North Carolina - Chapel Hill	Computer Science	
MS	2015	Univ North Carolina - Chapel Hill	Computer Science	

C. University Experience

Position	*University*	*Dates*
Associate Professor, Computer Science	Texas State University. San Marcos, TX, United States	September 1, 2024 - Present
Assistant Professor, Computer Science	Texas State University. San Marcos, TX, United States	September 1, 2018 - August 31, 2024
Research Assistant, Computer Science	University of North Carolina at Chapel Hill. Chapel Hill, NC, United States	August 20, 2013 - May 11, 2018

II. TEACHING

B. Courses Taught:

Texas State University:

CS 3358 - DATA STRCTS & ALGM

CS 3360 - COMPUTING SYSTEMS FUNDAMENTALS

CS 4395 - INDEPENDENT STUDY

CS 5199B - THESIS

CS 5302 - FOUND DATA STRUCT_ALGRTHM DSN

CS 5399A - THESIS

CS 5399B - THESIS

CS 7199 - DISSERTATION

CS 7299 - DISSERTATION

CS 7387 - RESEARCH IN COMPUTER SCIENCE

CS 7389C - REAL-TIME SYSTEMS

CS 7399 - DISSERTATION

CS 7699 - DISSERTATION

CS 7999 - DISSERTATION

University of North Carolina at Chapel Hill:

COMP 283 - Discrete Structures

C. Directed Student Learning (i.e. theses, dissertations, exit committees, etc.):

Member, Dissertation, "Adaptive Real-Time Heterogeneous Scheduling for Streaming Applications: the Deep Learning Inference Use Case", Status: In Progress. (January 13, 2025 - Present). Texas State University.
Student(s): Elvis Fefey, Doctoral, Ph.D.

Supervisor / Chair, Dissertation, "TBD", Status: In Progress. (August 21, 2023 - Present). Texas State University.
Student(s): Ishrak Ratul, Doctoral, Ph.D.

Supervisor / Chair, Independent Study, "Parallelized IDK Cascades for Faster Inference with Preserved Accuracy", Status: Completed. (August 25, 2025 - December 12, 2025). Texas State University.
Student(s): Ishrak Ratul, Doctoral, Ph.D.

Member, Dissertation, "A Unified Autotuning Framework for Deep Learning on the Cloud-edge Continuum", Status: Completed. (July 3, 2023 - December 12, 2025). Computer Science, Texas State University.
Student(s): Trevor Hanz, Doctoral, Ph.D.

Supervisor / Chair, Dissertation, "Precise Scheduling of Mixed-Criticality Tasks in Real-Time Systems", Status: Completed. (August 26, 2019 - August 2, 2025). Texas State University.
Student(s): Tianning She, Doctoral, Ph.D.

Supervisor / Chair, Independent Study, "Cascading IDK Classifiers to Accelerate Object Recognition While Preserving Accuracy", Status: Completed. (January 13, 2025 - May 7, 2025). Texas State University.
Student(s): Ishrak Ratul, Doctoral, Ph.D.

Supervisor / Chair, Independent Study, "Synthesis of IDK Classifier Cascades for Real-Time Object Recognition", Status: Completed. (August 26, 2024 - December 13, 2024). Texas State University.
Student(s): Ishrak Ratul, Doctoral, Ph.D.

Supervisor / Chair, Independent Study, "Optimization of Neural Network Inference on NVIDIA Jetson using TensorRT", Status: Completed. (May 28, 2024 - August 2, 2024). Texas State University.
Student(s): Ishrak Ratul, Doctoral, Ph.D.

Supervisor / Chair, Independent Study, "Optimizing Neural Network Inference on Heterogeneous Edge Platforms with TensorRT", Status: Completed. (January 16, 2024 - May 11, 2024). Texas State University.
Student(s): Ishrak Ratul, Doctoral, Ph.D.

Member, Dissertation, "Multimodal Learning for Wearable Sensor-based Human Action Recognition", Status: Completed. (May 15, 2023 - May 11, 2024). Computer Science, Texas State University.
Student(s): Jianyuan Ni, Doctoral, Ph.D.

Supervisor / Chair, Dissertation, "Accelerating and Improving Deep-Learning Inference on Embedded Platforms via TensorRT", Status: Completed. (August 4, 2021 - May 11, 2024). Texas State University.
Student(s): Yuxiao Zhou, Doctoral, Ph.D.

Member, Dissertation, "Mitigating Data Shortage in Biomedical Signal Analysis: An Investigation into Transfer Learning and Generative Models", Status: Completed. (April 28, 2022 - August 5, 2023). Computer Science, Texas State University.
Student(s): Xiaomin Li, Doctoral, Ph.D.

Supervisor / Chair, Independent Study, "Accelerating and Improving Deep-Learning Inference on Embedded Platforms via Quantization in TensorRT", Status: Completed. (January 17, 2023 - May 10, 2023). Computer Science, Texas State University.
Student(s): Yuxiao Zhou, Doctoral, Ph.D.

Supervisor / Chair, Independent Study, "Researching Autonomous Driving Through AWS Deepracer", Status: Completed. (August 22, 2022 - December 9, 2022). Computer Science, Texas State University.

Student(s): Jacob McCalip, Undergraduate, B.S.

Member, Master's Thesis, "A Massively Parallel Exact TSP Solver for Small Problem Sizes", Status: Completed. (May 20, 2022 - August 5, 2022). Computer Science, Texas State University.
Student(s): Benila Jerald Xavier, Graduate, M.S.

Supervisor / Chair, Independent Study, "Scheduling Constrained-Deadline Mixed-Criticality Tasks in Precise Mixed-Criticality Systems on a Varying-Speed Processor", Status: Completed. (January 18, 2022 - May 9, 2022). Computer Science, Texas State University.
Student(s): Tianning She, Doctoral, Ph.D.

Supervisor / Chair, Independent Study, "Deep Learning-based Object detection on Heterogeneous Processors with TensorRT", Status: Completed. (January 18, 2022 - May 9, 2022). Computer Science, Texas State University.
Student(s): Yuxiao Zhou, Doctoral, Ph.D.

Supervisor / Chair, Independent Study, "Embedding Traffic Design Detection into Low-Power Heterogeneous Architectures", Status: Completed. (August 24, 2021 - December 13, 2021). Computer Science, Texas State University.
Student(s): Yuxiao Zhou, Doctoral, Ph.D.

Supervisor / Chair, Master's Thesis, "Setting Priority Points for Global EDF-like Scheduling of Sporadic Tasks with Arbitrary Deadlines on Multiprocessors", Status: Completed. (August 24, 2020 - May 14, 2021). Computer Science, Texas State University.
Student(s): Tian Liang, Graduate, M.S.

Supervisor / Chair, Independent Study, "Precise Scheduling of Mixed-Criticality Tasks on Varying-Speed Multiprocessors", Status: Completed. (August 24, 2020 - December 11, 2020). Computer Science, Texas State University.
Student(s): Tianning She, Doctoral, Ph.D.

Member, Master's Thesis, "A Parallel Implementation of a Greedy TSP Algorithm", Status: Completed. (August 24, 2020 - December 11, 2020). Computer Science, Texas State University.
Student(s): Andres Gonzalez, Graduate, M.S.

Supervisor / Chair, Independent Study, "Building an F1Tenth Autonomous Racing Car Prototype Based on NVIDIA TX2", Status: Completed. (January 21, 2020 - May 15, 2020). Computer Science, Texas State University.
Student(s): Tianning She, Doctoral, Ph.D.

D. Courses Prepared and Curriculum Development:

CS 3360 Computing Systems Fundamentals, Curriculum Development, Texas State University. Taught: December 2020 - December 2021.

CS 3358 Data Structures and Algorithms, First Time Course Preparation, Texas State University. Taught: August 2018 - December 2018.

CS 7389C Real-Time Systems, New Course, Texas State University. Taught: October 2019 - May 2020.

III. SCHOLARLY/CREATIVE

A. Works in Print (including works accepted, forthcoming, in press):

2. Articles:

a. Refereed Journal Articles:

Ratul, I. J., Zhou, Y., & Yang, K. (2025). Accelerating Deep Learning Inference: A Comparative Analysis of Modern Acceleration Frameworks. *Electronics*, *14*(15), 2977:1–2977:20. https://doi.org/10.3390/electronics14152977

Agrawal, K., Baruah, S., Guo, Z., Li, J., Reghenzani, F., Yang, K., & Zhao, J. (2025). Faster Classification of Time-Series Input Streams (Artifact). *Dagstuhl Artifacts Series (DARTS)*, 4:1–4:3. https://doi.org/10.4230/DARTS.11.1.4

Arafat, A. A., Wilson, K., Yang, K., & Guo, Z. (2024). Dynamic Priority Scheduling of Multi-Threaded ROS 2 Executor With Shared Resources. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), Special Issue for the 24th ACM SIGBED International Conference on Embedded Software (EMSOFT)*, *43*(11), 3732–3743. https://doi.org/10.1109/TCAD.2024.3445259

Jiang, Z., Yang, K., Fisher, N., Guan, N., Audsley, N., & Dong, Z. (2024). Hopscotch: A Hardware-Software Co-design for Efficient Cache Resizing on Multi-core SoCs. *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, *35*(1), 89–104. https://doi.org/10.1109/TPDS.2023.3332711

Jiang, Z., Yang, K., Fisher, N., Gray, I., Audsley, N., & Dong, Z. (2023). AXI-ICRT: Towards a Real-Time AXI-Interconnect for Highly Integrated SoCs. *IEEE Transactions on Computers (TC)*, *72*(3), 786–799. https://doi.org/10.1109/TC.2022.3179227

Jiang, Z., Yang, K., Ma, Y., Fisher, N., Audsley, N., & Dong, Z. (2023). Towards Hard Real-Time and Energy-Efficient Virtualization for Many-core Embedded Systems. *IEEE Transactions on Computers (TC)*, *72*(1), 111–126. https://doi.org/10.1109/TC.2022.3207115

Vaidhun, S., She, T., Gu, Q., Das, S. K., Yang, K., & Guo, Z. (2023). Precise Mixed-Criticality Scheduling on Varying-Speed Multiprocessors. *IEEE Transactions on Computers (TC)*, *72*(1), 43–54. https://doi.org/10.1109/TC.2022.3197078

Jiang, Z., Yang, K., Fisher, N., Audsley, N., & Dong, Z. (2022). Towards an Energy-Efficient Quarter-Clairvoyant Mixed-Criticality System. *Journal of Systems Architecture (JSA)*, *130*, 102683:1–17. https://doi.org/10.1016/j.sysarc.2022.102683

Guo, Z., Vaidhun, S., Satinelli, L., Arefin, S., Wang, J., & Yang, K. (2022). Mixed-Criticality Scheduling upon Permitted Failure Probability and Dynamic Priority. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, *41*(1), 62–75. https://doi.org/10.1109/TCAD.2021.3053232

Dong, Z., Yang, K., Fisher, N., & Liu, C. (2021). Tardiness Bounds for Sporadic Gang Tasks under Preemptive Global EDF Scheduling. *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, *32*(12), 2867–2879. https://doi.org/10.1109/TPDS.2021.3081019

Bhuiyan, A., Yang, K., Arefin, S., Saifullah, A., Guan, N., & Guo, Z. (2021). Mixed-Criticality Real-Time Scheduling of Gang Task Systems. *Real-Time Systems*, *57*(3), 268–301. https://doi.org/10.1007/s11241-021-09368-1

Voronov, S., Anderson, J. H., & Yang, K. (2021). Tardiness Bounds for Fixed-Priority Global Scheduling without Intra-Task Precedence Constraints. *Real-Time Systems*, *57*(1), 4–54. https://doi.org/10.1007/s11241-020-09360-1

3. Conference Proceedings:

a. Refereed Conference Proceedings:

Ratul, I. J., Guo, Z., & Yang, K. (2025). Cascading IDK Classifiers to Accelerate Object Recognition While Preserving Accuracy. In *Proceedings of the 49th IEEE Annual Computers, Software, and Applications Conference (COMPSAC)* (pp. 1522–1525). IEEE. https://doi.org/10.1109/COMPSAC65507.2025.00194

Agrawal, K., Baruah, S., Guo, Z., Li, J., Reghenzani, F., Yang, K., & Zhao, J. (2025). Faster Classification of Time-Series Input Streams. In *Proceedings of the 37th Euromicro Conference on Real-Time Systems (ECRTS)* (pp. 13:1–13:22). Schloss Dagstuhl. https://doi.org/10.4230/LIPIcs.ECRTS.2025.13

Zhou, Y., Guo, Z., Dong, Z., & Yang, K. (2024). Multi-Accelerator Neural Network Inference via TensorRT in Heterogeneous Embedded Systems. In *Proceedings of the 48th IEEE Annual Computers, Software, and Applications Conference (COMPSAC)* (pp. 463–472). IEEE Computer Society Press. https://doi.org/10.1109/COMPSAC61105.2024.00070

Guo, Z., Vaidhun, S., Arafat, A. A., Guan, N., & Yang, K. (2023). Stealing Static Slack via WCRT and Sporadic P-Servers in Deadline-Driven Scheduling. In

Proceedings of the 44th IEEE Real-Time Systems Symposium (RTSS) (pp. 40–52). IEEE Computer Society Press. https://doi.org/10.1109/RTSS59052.2023.00014

Zhou, Y., Guo, Z., Dong, Z., & Yang, K. (2023). TensorRT Implementations of Model Quantization on Edge SoC. In *Proceedings of the 16th IEEE International Symposium on Embedded Multicore/Many-core Systems-on-Chip (MCSoC)* (pp. 486–493). IEEE. https://doi.org/10.1109/MCSoC60832.2023.00078

Tian, A., Guerra John, E., & Yang, K. (2023). Poster: Unraveling Reward Functions for Head-to-Head Autonomous Racing in AWS DeepRacer. In *Proceedings of the 24th International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (MobiHoc), as part of the 8th National Workshop for REU Research in Networking and Systems (REUNS)* (pp. 592–594). ACM Press. https://doi.org/10.1145/3565287.3617987

McCalip, J., Pradhan, M., & Yang, K. (2023). Reinforcement Learning Approaches for Racing and Object Avoidance on AWS DeepRacer. In *Proceedings of the 47th IEEE Annual Computers, Software, and Applications Conference (COMPSAC)* (pp. 958–961). IEEE Computer Society Press. https://doi.org/10.1109/COMPSAC57700.2023.00129

Arafat, A. A., Vaidhun, S., Liu, L., Yang, K., & Guo, Z. (2023). Compositional Mixed-Criticality Systems with Multiple Executions and Resource-Budgets Model. In *Proceedings of the 27th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)* (pp. 67–79). IEEE Computer Society Press. https://doi.org/10.1109/RTAS58335.2023.00013

She, T., Guo, Z., & Yang, K. (2022). Precise Scheduling Mixed-Criticality Gang Tasks with Reserved Processors. In *Proceedings of the 9th International Workshop on Mixed Criticality Systems (WMC)* (pp. 25–30).

Zhou, Y., & Yang, K. (2022). Exploring TensorRT to Improve Real-Time Inference for Deep Learning. In *Proceedings of the 18th IEEE International Conference on Embedded Software and Systems (ICESS)* (pp. 2011–2018). IEEE. https://doi.org/10.1109/HPCC-DSS-SmartCity-DependSys57074.2022.00299

Jiang, Z., Yang, K., Audsley, N., Fisher, N., Shi, W., & Dong, Z. (2022). BlueScale: A Scalable Memory Architecture for Predictable Real-Time Computing on Highly Integrated SoCs. In *Proceedings of the 59th ACM/IEEE Design Automation Conference (DAC)* (pp. 1261–1266). ACM Press. https://doi.org/10.1145/3489517.3530612

She, T., Guo, Z., & Yang, K. (2022). Scheduling Constrained-Deadline Tasks in Precise Mixed-Criticality Systems on a Varying-Speed Processor. In *Proceedings of the 30th International Conference on Real-Time Networks*

and Systems (RTNS) (pp. 94–102). ACM Press. https://doi.org/10.1145/3534879.3534897

Jiang, Z., Yang, K., Ma, Y., Fisher, N., Audsley, N., & Dong, Z. (2021). I/O-GUARD: Hardware/Software Co-Design for I/O Virtualization with Guaranteed Real-Time Performance. In *Proceedings of the 58th ACM/IEEE Design Automation Conference (DAC)* (pp. 1159–1164). IEEE Press. https://doi.org/10.1109/DAC18074.2021.9586156

She, T., Guo, Z., Gu, Q., & Yang, K. (2021). Reserving Processors by Precise Scheduling of Mixed-Criticality Tasks. In *Proceedings of the27th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)* (pp. 104–109). IEEE Computer Society Press. https://doi.org/10.1109/RTCSA52859.2021.00020

Jiang, Z., Audsley, N., Shi, D., Yang, K., Fisher, N., & Dong, Z. (2021). Brief Industry Paper: AXI-InterconnectRT: Towards a Real-Time AXI-Interconnect in System-on-Chips. In *Proceedings of the 27th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)* (pp. 437–440). IEEE Computer Society Press. https://doi.org/10.1109/RTAS52030.2021.00046

She, T., Vaidhun, S., Gu, Q., Das, S. K., Guo, Z., & Yang, K. (2021). Precise Scheduling of Mixed-Criticality Tasks on Varying-Speed Multiprocessors. In *Proceedings of the 29th International Conference on Real-Time Networks and Systems (RTNS)* (pp. 134–143). ACM Press. https://doi.org/10.1145/3453417.3453428

Yang, K., & Dong, Z. (2020). Mixed-Criticality Scheduling in Compositional Real-Time Systems with Multiple Budget Estimates. In *Proceedings of the 41st IEEE Real-Time Systems Symposium (RTSS)* (pp. 25–37). IEEE Computer Society Press. https://doi.org/10.1109/RTSS49844.2020.00014

Jiang, Z., Yang, K., Fisher, N., Audsley, N., & Dong, Z. (2020). Pythia-MCS: Enabling Quarter-Clairvoyance in I/O-Driven Mixed-Criticality Systems. In *Proceedings of the 41st IEEE Real-Time Systems Symposium (RTSS)* (pp. 38–50). IEEE Computer Society Press. https://doi.org/10.1109/RTSS49844.2020.00015

Yang, K., Bhuiyan, A., & Guo, Z. (2020). F2VD: Fluid Rates to Virtual Deadlines for Precise Mixed-Criticality Scheduling on a Varying-Speed Processor. In *Proceedings of the 39th IEEE/ACM International Conference on Computer-Aided Design (ICCAD)* (pp. 1–9). ACM Press. https://doi.org/10.1145/3400302.3415716

Guo, Z., Yang, K., Yao, F., & Awad, A. (2020). Inter-Task Cache Interference Aware Partitioned Real-Time Scheduling. In *Proceedings of the 35th ACM/SIGAPP Symposium On Applied Computing (SAC)* (pp. 218–226). ACM Press. https://doi.org/10.1145/3341105.3374014

Dong, Z., Shi, W., Tong, G., & Yang, K. (2020). Collaborative Autonomous Driving: Vision and Challenges. In *Proceedings of the 3rd IEEE International Conference on Connected and Autonomous Driving (MetroCAD)* (pp. 17–26). IEEE. https://doi.org/10.1109/MetroCAD48866.2020.00010

Bhuiyan, A., Yang, K., Arefin, S., Saifullah, A., Guan, N., & Guo, Z. (2019). Mixed-Criticality Multicore Scheduling of Real-Time Gang Task Systems. In *Proceedings of the 40th IEEE Real-Time Systems Symposium (RTSS)* (pp. 469–480). IEEE Computer Society Press. https://doi.org/10.1109/RTSS46320.2019.00048

Yang, K., & Dong, Z. (2019). Mixed-Criticality Scheduling with Varying Processor Supply in Compositional Real-Time Systems. In *Proceedings of the 7th International Workshop on Mixed Criticality Systems (WMC)* (pp. 26–31).

Bhuiyan, A., Guo, Z., Sruti, S., & Yang, K. (2019). Precise Scheduling of Mixed-Criticality Tasks by Varying Processor Speed. In *Proceedings of the 27th International Conference on Real-Time Networks and Systems (RTNS)* (pp. 123–132). ACM Press. https://doi.org/10.1145/3356401.3356410

Yang, K., & Guo, Z. (2019). EDF-Based Mixed-Criticality Scheduling with Graceful Degradation by Bounded Lateness. In *Proceedings of the 25th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)* (pp. 1–6). IEEE Computer Society Press. https://doi.org/10.1109/RTCSA.2019.8864559

Yang, M., Amert, T., Yang, K., Otterness, N., Anderson, J. H., Smith, F. D., & Wang, S. (2018). Making OpenVX Really "Real Time." In *Proceedings of the 39th IEEE Real-Time Systems Symposium (RTSS)* (pp. 80–93). IEEE Computer Society Press. https://doi.org/10.1109/RTSS.2018.00018

Guo, Z., Yang, K., Vaidhun, S., Arefin, S., Das, S. K., & Xiong, H. (2018). Uniprocessor Mixed-Criticality Scheduling with Graceful Degradation by Completion Rate. In *Proceedings of the 39th IEEE Real-Time Systems Symposium (RTSS)* (pp. 373–383). IEEE Computer Society Press. https://doi.org/DOI 10.1109/RTSS.2018.00052

Voronov, S., Anderson, J. H., & Yang, K. (2018). Tardiness Bounds for Fixed-Priority Global Scheduling without Intra-Task Precedence Constraints. In *Proceedings of the 26th International Conference on Real-Time Networks and Systems (RTNS)* (pp. 8–18). ACM Press. https://doi.org/10.1145/3273905.3273913

Guo, Z., Santinelli, L., & Yang, K. (2018). Mixed-Criticality Scheduling with Limited HI-Criticality Behaviors. In *Proceedings of the 4th Symposium on Dependable Software Engineering: Theories, Tools and Applications*

(SETTA) (pp. 187–199). Springer. https://doi.org/10.1007/978-3-319-99933-3_13

Yang, K., & Anderson, J. H. (2017). On the Soft Real-Time Optimality of Global EDF on Uniform Multiprocessors. In *Proceedings of the 38th IEEE Real-Time Systems Symposium (RTSS)* (pp. 319–330). IEEE Computer Society Press. https://doi.org/10.1109/RTSS.2017.00037

Yang, K., & Anderson, J. H. (2016). On the Dominance of Minimum-Parallelism Multiprocessor Supply. In *Proceedings of the 37th IEEE Real-Time Systems Symposium (RTSS)* (pp. 215–226). IEEE Computer Society Press. https://doi.org/10.1109/RTSS.2016.029

Yang, K., Yang, M., & Anderson, J. H. (2016). Reducing Response-Time Bounds for DAG-Based Task Systems on Heterogeneous Multicore Platforms. In *Proceedings of the 24th International Conference on Real-Time Networks and Systems (RTNS)* (pp. 349–358). ACM Press. https://doi.org/10.1145/2997465.2997486

Nemitz, C. E., Yang, K., Yang, M., Ekberg, P., & Anderson, J. H. (2016). Multiprocessor Real-Time Locking Protocols for Replicated Resources. In *Proceedings of the 28th Euromicro Conference on Real-Time Systems (ECRTS)* (pp. 50–60). IEEE Computer Society Press. https://doi.org/10.1109/ECRTS.2016.29

Yang, K., & Anderson, J. H. (2016). Tardiness Bounds for Global EDF Scheduling on a Uniform Multiprocessor. In *Proceedings of the 7th International Real-Time Scheduling Open Problems Seminar (RTSOPS)* (pp. 3–4).

Elliott, G. A., Yang, K., & Anderson, J. H. (2015). Supporting Real-Time Computer Vision Workloads using OpenVX on Multicore+GPU Platforms. In *Proceedings of the 36th IEEE Real-Time Systems Symposium (RTSS)* (pp. 273–284). IEEE Computer Society Press. https://doi.org/10.1109/RTSS.2015.33

Yang, K., Elliott, G. A., & Anderson, J. H. (2015). Analysis for Supporting Real-Time Computer Vision Workloads using OpenVX on Multicore+GPU Platforms. In *Proceedings of the 23rd International Conference on Real-Time Networks and Systems (RTNS)* (pp. 77–86). ACM Press. https://doi.org/10.1145/2834848.2834863

Guo, Z., Santinelli, L., & Yang, K. (2015). EDF Schedulability Analysis on Mixed-Criticality Systems with Permitted Failure Probability. In *Proceedings of the 21st IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)* (pp. 187–196). IEEE Computer Society Press. https://doi.org/10.1109/RTCSA.2015.8

Yang, K., & Anderson, J. H. (2015). On the Soft Real-Time Optimality of Global EDF on Multiprocessors: From Identical to Uniform Heterogeneous. In *Proceedings of the 21st IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)* (pp. 1–10). IEEE Computer Society Press. https://doi.org/10.1109/RTCSA.2015.14

Yang, K., & Anderson, J. H. (2015). An Optimal Semi-Partitioned Scheduler for Uniform Heterogeneous Multiprocessors. In *Proceedings of the 27th Euromicro Conference on Real-Time Systems (ECRTS)* (pp. 199–210). IEEE Computer Society Press. https://doi.org/10.1109/ECRTS.2015.25

Yang, K., & Anderson, J. H. (2014). Optimal GEDF-Based Schedulers that Allow Intra-Task Parallelism on Heterogeneous Multiprocessors. In *Proceedings of the 12th IEEE Symposium on Embedded Systems for Real-Time Multimedia (ESTIMedia)* (pp. 30–39). IEEE Computer Society Press. https://doi.org/10.1109/ESTIMedia.2014.6962343

Yang, K., & Anderson, J. H. (2014). Soft Real-Time Semi-Partitioned Scheduling with Restricted Migrations on Uniform Heterogeneous Multiprocessors. In *Proceedings of the 22nd International Conference on Real-Time Networks and Systems (RTNS)* (pp. 215–224). ACM Press. https://doi.org/10.1145/2659787.2659808

10. Other Works in Print:

Software:

Reghenzani, F., Agrawal, K., Baruah, S., Guo, Z., Li, J., Yang, K., & Zhao, J. (2025, May). Scripts for the article “Faster Classification of Time-Series Input Streams.” *Zenodo*. Zenodo. https://doi.org/10.5281/zenodo.15429421

B. Works Not in Print:

1. Papers Presented at Professional Meetings:

Yang, K., 41st IEEE Real-Time Systems Symposium, "Mixed-Criticality Scheduling in Compositional Real-Time Systems with Multiple Budget Estimates," Virtual Conference. (December 2020).

Yang, K., 25th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications, "EDF-Based Mixed-Criticality Scheduling with Graceful Degradation by Bounded Lateness," Hangzhou, China. (August 2019).

Yang, K., 38th IEEE Real-Time Systems Symposium, "On the Soft Real-Time Optimality of Global EDF on Uniform Multiprocessors," Paris, France. (December 2017).

Yang, K., 37th IEEE Real-Time Systems Symposium, "On the Dominance of Minimum-Parallelism Multiprocessor Supply," Porto, Portugal. (December 2016).

Yang, K., "Reducing Response-Time Bounds for DAG-Based Task Systems on Heterogeneous Multicore Platforms," Brest, France. (October 2016).

Yang, K., 7th International Real-Time Scheduling Open Problems Seminar, "Tardiness Bounds for Global EDF Scheduling on a Uniform Multiprocessor," Toulouse, France. (July 2016).

Yang, K., 36th IEEE Real-Time Systems Symposium, "Supporting Real-Time Computer Vision Workloads using OpenVX on Multicore+GPU Platforms," San Antonio, TX, United States. (December 2015).

Yang, K., 23rd International Conference on Real-Time Networks and Systems, "Analysis for Supporting Real-Time Computer Vision Workloads using OpenVX on Multicore+GPU Platforms," Lille, France. (November 2015).

Yang, K., 21st IEEE International Conference on Embedded and Real-Time Computing Systems and Applications, "On the Soft Real-Time Optimality of Global EDF on Multiprocessors: From Identical to Uniform Heterogeneous," Hong Kong, China. (August 2015).

Yang, K., 27th Euromicro Conference on Real-Time Systems, "An Optimal Semi-Partitioned Scheduler for Uniform Heterogeneous Multiprocessors," Lund, Sweden. (July 2015).

Yang, K., 22nd International Conference on Real-Time Networks and Systems, "Soft Real-Time Semi-Partitioned Scheduling with Restricted Migrations on Uniform Heterogeneous Multiprocessors," Versailles, France. (October 2014).

2. Invited Talks, Lectures, and Presentations:

Yang, K., "Mixed-Criticality Scheduling for Predictable Resilience in Real-Time Systems," Wayne State University, Detroit, MI, United States. (January 2023).

Yang, K., "Heterogeneous, Compositional, and Mixed-Criticality Real-Time Scheduling," The University of Texas at San Antonio, San Antonio, TX, United States. (September 2019).

Yang, K., Dagstuhl Seminar 19101: Analysis, Design, and Control of Predictable Interconnected Systems, "Multiple supply estimations in compositional real-time systems with mixed-criticality scheduling," Wadern, Germany. (March 2019).

Yang, K., 6th International Workshop on Mixed Criticality Systems, "Mixed-Criticality Scheduling with Varying Processor Supply in Compositional Real-Time Systems," Nashville, TN, United States. (December 2018).

5. Other Works not in Print:

a. Works "submitted" or "under review":

Journal Articles:

She, T., Guo, Z., Gu, Q., & Yang, K. (Submitted / Under Review). Precise Mixed-Criticality Scheduling on Multiprocessors with Reserved Processors. *Journal of Systems Architecture*. (April 2024)

She, T., Guo, Z., & Yang, K. (Submitted / Under Review). Precise Scheduling of Mixed-Criticality Gang Tasks with Reserved Processors. *Journal of Systems Architecture*. (April 2024)

C. Scholarly / Creative Grants and Contracts:

1. Funded External Grants and Contracts:

Yang, Kecheng (Principal). CAREER: Predictable Real-Time Computing in the Presence of Unpredictabilities, National Science Foundation (NSF), Federal, $587,080.00. (Submitted: July 2024, Funded: July 2025 - June 2030). Grant.

Yang, Kecheng (Principal), Ngu, Hee Hiong (Co-Principal), Chen, Xiao (Supporting), Islam, Tanzima Z (Supporting), Metsis, Vangelis (Supporting), Hou, Tao (Supporting), Rathore, Heena (Supporting), Wang, Lu (Supporting), Queiroz de Farias, Mylene Christine (Supporting), Qasem, Apan Muhammad (Supporting). REU Site: Research Experiences for Undergraduates in Edge Computing, National Science Foundation (NSF), Federal, $389,995.00. (Submitted: August 2021, Funded: March 1, 2022 - February 28, 2026). Grant.

Yang, Kecheng (Principal). CRII: CNS: Supporting Mixed-Criticality Real-Time Systems on Heterogeneous Platforms, National Science Foundation (NSF), Federal, $175,000.00. (Submitted: October 2020, Funded: July 1, 2021 - June 30, 2025). Grant.

Yang, Kecheng (Principal), Ngu, Hee Hiong (Co-Principal). Supplement to REU Site: Research Experiences for Undergraduates in Edge Computing, National Science Foundation (NSF), Federal, $10,000.00. (Submitted: November 2023, Funded: January 2024 - February 2025). Grant.

Yang, Kecheng (Principal). REU Supplement to CRII: CNS: Supporting Mixed-Criticality Real-Time Systems on Heterogeneous Platforms, National Science Foundation (NSF), Federal, $16,000.00. (Submitted: February 2023, Funded: August 2023 - May 2024). Grant.

Yang, Kecheng (Principal). REU Supplement to CRII: CNS: Supporting Mixed-Criticality Real-Time Systems on Heterogeneous Platforms, National Science Foundation (NSF), Federal, $16,000.00. (Submitted: March 2022, Funded: August 2022 - May 2023). Grant.

2. Submitted, but not Funded, External Grants and Contracts:

Yang, Kecheng (Principal). CAREER: Towards Predictable Resilience in Real-Time Systems, National Science Foundation (NSF), Federal, $533,480.00. (Submitted: July 2022). Grant.

Yang, Kecheng (Principal). Collaborative Research: CPS: Small: Modularized Safety Mechanisms in ROS2 for Autonomous Vehicles, National Science Foundation (NSF), Federal, $250,000.00. (Submitted: April 2022). Grant.

Yang, Kecheng (Principal). CAREER: Towards Consolidated Real-Time Systems Design and Implementation, National Science Foundation (NSF), Federal, $500,000.00. (Submitted: July 2021). Grant.

Ji, Yangfeng (Principal), Yang, Kecheng (Co-Principal), Guo, Zhishan (Co-Principal), Albanese, Vincent (Co-Principal). DeBites – A Deep-learning and Blockchain-based skill taxonomy and credential-sharing platform for independent workers, National Science Foundation (NSF), Federal, $544,897.00. (Submitted: February 2021). Grant.

Gu, Qijun (Principal), Yang, Kecheng (Co-Principal). SaTC: CORE: Small: Secure and Safe Control for Unmanned Vehicles, National Science Foundation (NSF), Federal, $500,000.00. (Submitted: December 2020). Grant.

Yang, Kecheng (Principal). CNS Core: Small: Bringing Mixed-Criticality Provisioning into Compositional Real-Time Systems, National Science Foundation (NSF), Federal, $499,995.00. (Submitted: November 2019). Grant.

Yang, Kecheng (Principal). CRII: CSR: Towards Real-Time Scheduling with Predictable Migrations on Heterogeneous Multiprocessors, National Science Foundation (NSF), Federal, $174,993.00. (Submitted: August 2019). Grant.

3. Funded Internal Grants and Contracts:

Yang, Kecheng (Principal). Real-Time Scheduling Algorithms and Analysis for ROS2 Systems, Texas State University, Texas State University, $8,000.00. (Submitted: October 2021, Funded: January 2022 - May 2023). Grant.

Yang, Kecheng (Principal). Mixed-Criticality Scheduling in Compositional Real-Time Systems, Texas State University, Texas State University, $8,000.00. (Submitted: October 2018, Funded: January 2019 - December 2020). Grant.

D. Scholarly / Creative Fellowships, Awards, Honors:

Award / Honor Recipient: CAREER Award, National Science Foundation (NSF). 2025

Award / Honor Recipient: CRII Award, National Science Foundation (NSF). 2021

Award / Honor Recipient: Best Student Paper Award, 40th IEEE Real-Time Systems Symposium.
2019

Award / Honor Recipient: Outstanding Paper Award, 40th IEEE Real-Time Systems Symposium.
2019

Award / Honor Recipient: Schloss Dagstuhl - NSF Support Grant for Junior Researchers, Dagstuhl Seminar 19101, Schloss Dagstuhl and NSF.
2019

Award / Honor Recipient: Outstanding Paper Award, 26th International Conference on Real-Time Networks and Systems.
2018

Fellowship Recipient: Dissertation Completion Fellowship, University of North Carolina at Chapel Hill.
2017 - 2018

Award / Honor Recipient: Student Travel Grant, 38th IEEE Real-Time Systems Symposium.
2017

Award / Honor Recipient: Student Travel Grant, 37th IEEE Real-Time Systems Symposium.
2016

Award / Honor Recipient: Student Travel Grant, 23rd International Conference on Real-Time Networks and Systems.
2015

IV. SERVICE

A. Institutional

2. College:

Member, College Research Enhancement Committee. (2022).

3. Department/School:

Member, Personnel Committee. (2024 - Present).

Member, PhD Program Committee. (2024 - Present).

Course Coordinator, CS 3360 Computing Systems Fundamentals. (2022 - Present).

Exam Coordinator, Credit by Exam for CS 3358. (2022 - Present).

Member, Space Committee. (2021 - Present).

Course Coordinator, CS 3358 Data Structures and Algorithms. (2019 - Present).

Member, Faculty (NTL) Search Committee. (2024).

Member, Faculty (TT) Search Committee. (2023 - 2024).

Member, Undergraduate Committee. (2021 - 2024).

Member, Academic Budget Specialist Search Committee. (2022 - 2023).

Member, Faculty (TT) Search Committee. (2021 - 2022).

Member, Master's Program Committee. (2018 - 2021).

Coordinating Instructor, Facebook EIR Program. (August 2020 - May 2021).

B. Professional:

Reviewer / Referee, IEEE Transactions on Services Computing. (2025 - Present).

Reviewer / Referee, IEEE Transactions on Computers. (2021 - Present).

Reviewer / Referee, IEEE Transactions on Parallel and Distributed Systems. (2020 - Present).

Reviewer / Referee, ACM Transactions on Embedded Computing Systems. (2019 - Present).

Reviewer / Referee, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems. (2019 - Present).

Reviewer / Referee, Journal of Scheduling. (2019 - Present).

Reviewer / Referee, Journal of Systems Architecture. (2019 - Present).

Reviewer / Referee, Sustainable Computing, Informatics and Systems. (2019 - Present).

Reviewer / Referee, ACM Transactions on Design Automation of Electronic Systems. (2018 - Present).

Reviewer / Referee, Real-Time Systems. (2017 - Present).

Member, Program Committee, 31st IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA). (2025).

Member, Program Committee, 31st IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS). (2025).

Member, Program Committee, 49th IEEE Annual Computers, Software, and Applications Conference (COMPSAC). (2025).

Member, Program Committee, 17th IEEE International Symposium on Embedded Multicore/Many-core Systems-on-Chip (MCSoC). (2024).

Member, Program Committee, 2nd Workshop on Optimization for Embedded and Real-Time Systems (OPERA). (2024).

Member, Program Committee, 30th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA). (2024).

Member, Program Committee, 45th IEEE Real-Time Systems Symposium (RTSS), BP Session. (2024).

Member, Program Committee, 10th International Workshop on Mixed Criticality Systems (WMC). (2023).

Member, Program Committee, 29th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA). (2023).

Member, Program Committee, 31st International Conference on Real-Time Networks and Systems (RTNS). (2023).

Member, Program Committee, 444th IEEE Real-Time Systems Symposium (RTSS). (2023).

Member, Program Committee, 18th IEEE International Conference on Embedded Software and Systems (ICESS). (2022).

Member, Program Committee, 28th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA). (2022).

Member, Program Committee, 28th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS). (2022).

Member, Program Committee, 43rd IEEE Real-Time Systems Symposium (RTSS). (2022).

Member, Program Committee, 5th International Conference on Connected and Autonomous Driving (MetroCAD). (2022).

Member, Program Committee, 9th International Workshop on Mixed Criticality Systems (WMC). (2022).

Member, Program Committee, 17th IEEE International Conference on Embedded Software and Systems (ICESS). (2021).

Member, Program Committee, 27th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA). (2021).

Member, Program Committee, 42nd IEEE Real-Time Systems Symposium (RTSS). (2021).

Member, Program Committee, 4th International Conference on Connected and Autonomous Driving (MetroCAD). (2021).

Reviewer / Referee, Design Automation for Embedded Systems. (2020 - 2021).

Reviewer / Referee, Journal of Electronic Science and Technology. (2020 - 2021).

Member, Program Committee, 16th IEEE International Conference on Embedded Software and Systems (ICESS). (2020).

Member, Program Committee, 26th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA). (2020).

Member, Program Committee, 26th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), BP Session. (2020).

Member, Program Committee, 29th International Conference on Computer Communication and Networks (ICCCN). (2020).

Reviewer / Referee, IEEE Transactions on Industrial Informatics. (2020).

Reviewer / Referee, Microprocessors and Microsystems. (2020).

Member, Program Committee, 22nd IEEE International Symposium on Real-Time Computing (ISORC). (2019).

Member, Program Committee, 25th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), BP Session. (2019).

Member, Program Committee, 28th International Conference on Computer Communication and Networks (ICCCN). (2019).

Reviewer / Referee, Microelectronics Journal. (2018 - 2019).

Member, Program Committee, 6th International Workshop on Mixed Criticality Systems (WMC). (2018).

Reviewer / Referee, International Journal of Information Technology & Decision Making. (2017 - 2018).

Reviewer / Referee, Information Processing Letters. (2014).