

PAVAN KUMAR PALURI

PhD Student @ University of Houston

@ pvpaluri@uh.edu
pvpk1994

(281)690-6216
Pavan Kumar Paluri

Houston, Texas

paluri.us

pavan-kumar-paluri-19940619

SUMMARY

- A self-driven and determined software developer with academic and research expertise in Embedded and Real-Time Systems software development having scientific research experience of 3 years and having co-authored in many IEEE Real-Time Operating system flagship conferences.

EDUCATION

PhD.

University of Houston

2017 – Now Houston, Texas

- Major: Computer Science
- Research field: Real-Time Systems; Operating-Systems; Virtualization; Scheduling Algorithms; Cyber-Physical Systems
- Thesis Topic: Real-Time Virtualization and Fault-Tolerance
- Enrolled for Masters in 2016, opted for PhD in 2017, transferred course credits from Masters to PhD.
- Relevant Coursework: Real-Time Systems, Operating Systems, Computer Architecture, Machine Learning
- GPA: 3.40/4.00

Bachelor of Science

VIT University

2012 – 2016 Chennai, India

- Major: Computer Science & Engineering
- Research Project: Automated Collision Notification System using ARM LPC 2148 Microcontroller.
- Relevant Coursework: Data Structures and Algorithms, Computer Networks, Embedded Systems.
- GPA: 8.23/10.00

LANGUAGES

C/C++
Python
Shell Scripting, PHP
Latex
HTML,CSS,Lua,R



TEACHING ASSISTANT

Operating Systems and Programming in C/C++

University of Houston

August 2017 – Now Houston, TX, US

WORK EXPERIENCE

Research Assistant - Real Time Systems Laboratory

University of Houston

August 2017 – Now Houston, TX

- Developed and designed novel Fault-tolerance technique for one of very popular Real-time CPU virtualization models i.e., Regularity based Resource Partitioning (RRP).
Results: Simulation results have shown excellent performance of real-time tasks even under high transient fault-rates
- First-ever to design and implement both single and multi-core Virtual Machine (VM) Schedulers using RRP model on popular open-source hypervisors Xen and XtratuM.
Results: VM schedulers have shown significant improvement in reducing maximum latencies while maintaining high throughput in comparison with contemporary Xen and XtratuM VM schedulers.
Also, The first-ever to have implemented a new functional prototype of ARINC 653 Multi-Core VM scheduler on x-86 Xen hypervisor.

Research in Real-Time Traffic Routing

University of Houston

October 2019 – Ongoing Houston, TX

- This project aims at minimizing the average travel time of all vehicles in a given network with respect to their individual travel deadlines to improve overall traffic throughput.
- It also offers a test bed based on Simulation of Urban MObility (SUMO) that can evaluate the performance of a traffic routing policy based on the average travel time of all vehicle agents in a given traffic grid.
- Results have shown a significant 57 percent decrease in average travel time of vehicles in comparison to state-of-art existing approach.

SKILLS

- Hypervisors:** Xen, XtratuM, Wind River
- Real-Time Systems:** RT-Linux, LitmusRT, RT-Xen, LithOS.
- Tools/ Software:** Nano, Xcode, PyCharm, CLion, Nginx webserver, PHP-FastCGI, Simulation of Urban MObility (SUMO), VxWorks
- APIs:** REST, xl-toolstack, Xen hypercalls, Libivrt, POSIX, self-developed Xen APIs, PAPI (Performance API)

PUBLICATIONS

- Cheng, A. M. K. et al. (2019). "Fault-Tolerant Regularity-Based Real-Time Virtual Resources". In: *2019 IEEE 25th International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, pp. 1–12.
- Paluri, P. K. et al. (2019). "Work-in-Progress: Leveraging the Selfless Driving Model to Reduce Vehicular Network Congestion". In: *2019 IEEE Real-Time Systems Symposium (RTSS)*, pp. 548–551.
- Guangli, Pavan Kumar Paluri, and Albert M. K. Cheng (Dec. 2018). "RRP Edge Computing System". In: *International Workshop on Trustworthy & Real-time Edge Computing for Cyber-Physical Systems*. TN, USA.
- Guangli, Pavan Kumar Paluri, and Albert Mo Kim Cheng (2018). "Task Mapping in a Regularity-based Resource Partitioning Hierarchical Real-Time System". In: *Work-in-Progress of the 30th Euromicro Conference on Real-Time Systems (ECRTS)*.