Yuanbin Zhou

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Research Interests

- **Real-time Systems**: Limited-preemptive Scheduling, Cache-aware Response Time Analysis
- **Operating Systems**: Virtualization

Education

Hangzhou Dianzi University, China *Sept. 2014 - Apr. 2017(expected)*
Master of Science in Computer Engineering
Advisor: Prof. Guojun Dai, Dr. Yifan Wu
GPA: 3.22/4

Zhejiang Gongshang University, China *Sept. 2010 - Jun. 2014*
Bachelor of Engineering in Electronics and Information Engineering
GPA: 3.14/4, 3.33/4 for last two years
Admitted as top 7,900 in Fujian Province(of 292,000 students)

Publications

- Yuanbin Zhou, Yifan Wu*, Guojun Dai, *"Delay Analysis for Fixed Priority Tasks with Last Non-Preemptive Region and Its Applications on Real-Time Control Systems"*(In progress)

Honors and Awards

- Excellent Intern(ratio: 2/5),Summer Camp of Open Source Code, CSDN.NET Sept. 2014
- 3rd Prize,National Undergraduate Electronic Design Contest,Zhejiang Province Aug. 2013
- 1st Prize,Undergraduate Electronic Design Contest,Zhejiang Gongshang University May. 2013
- Outstanding Ability Scholarship(rank:7/86),Zhejiang Gongshang University Mar. 2013
- 2nd Prize,Undergraduate Mathematical Contest in Modeling,CSEE,China Mar. 2013
- 1st Prize(3%),Mathematical Contest in Modeling,Zhejiang Gongshang University May. 2011

Research Experience

Cache Design for Mixed-criticality Systems *Sept. 2016 - present*

Cache Partition Technique is an essential way to increase predictability of memory behavior in the preemptive scheduling algorithm, but the worst-case execution time of one task can be varied by the size of cache allocated to this task. We try to explore the optimal algorithm on how to assign the size of cache for each task to guarantee the schedulability of high criticality tasks and improve the performance of low criticality tasks.

Design Method of Real-time Control Systems *May. 2015 - present*
with Dr. Yifan Wu
We analyze the *IO Delay* and *Sampling Delay* for fixed preemption points task model and find a scenario where there is no sampling delay self-pushing phenomenon that this task model can be applied in the

real-time control systems to improve control performance. When the preemption overhead cannot ignore, we design an algorithm to select the appropriate preemption points to minimize the *IO Delay*.

Implementation of Fixed Priority Scheduling Algorithm *Mar. 2015 - May. 2015*
with Dr. Yifan Wu
Implementation of fixed priority scheduling algorithm for RT-Thread Operating Systems which is a real-time operating system from China.

Internship

Software Engineer Intern - CSDN.NET, China *Jun. 2014 - Aug. 2014*
Excellent Intern
IPv6 Network Stack Porting
Porting *IPv6* network stack named *LwIP* to *RT-Thread* which is a real-time operating system from China. Some contributions can sere here and the document on how to use it can see here but it is written in Chinese. Awarded 5000 RMB($750) in this summer camp of open source code.

Software Engineer Intern - ETIM, China *Feb. 2014 - Apr. 2014*
Video Surveillance Software
Development of video surveillance software. Main work includes the encapsulation of SDK and design of user interfaces in Qt.

Skills

- Computer Skills: C/C++, Python, LaTeX, Git
- Platform Development: Linux, RTOS, Matlab, TrueTime