




# William Su

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 imNCNUwilliam

## Qualifications

- Software development for GNU/Linux, e.g., load balancing mechanism on NUMA systems.
- Familiar with Shell Scripts for test automations.
- Familiar with fastener manufacturing processes.

## Skills

C programming

GNU/Linux

Shell Scripts

## Work Experiences

Ying-Ming Jan 2012 - Oct 2014	Process RD	Study product spec., design the manufacturing processes, and deliver the quality control documentations. <b>(Realize the connections of the world.)</b>
Wistron Dec 2019 - May 2022	S/W RD	Receive or survey tool programs for product function tests. Develop and implement the test plan for products. Deliver the integration function test UI for test automation. <b>(Realize the philosophy of function tests.)</b>

## Eduction

National Chi Nan University - M.S in Information Management      Sep 2015 - Jun 2019

- Master Thesis: *"Improving the Inter-node Load Balancing with Enhanced Task Selection Policies for Multi-threaded Applications on NUMA systems."*

National Chi Nan University - B.S in Information Management      Sep 2005 - Jun 2010

## Publication

Mei-Ling Chiang, Shu-Wei Tu, William Su, Chen-Wei Lin (2018), "Enhancing Inter-Node Process Migration for Load Balancing on Linux-based NUMA Multicore Systems," 10th IEEE International Workshop on Computer Forensics in Software Engineering (CFSE 2018), Tokyo, Japan, July 23-27, 2018.

Mei-Ling Chiang, William Su, Shu-Wei Tu, and Zhen-Wei Lin (2019), "Memory-Aware Kernel Mechanism and Policies for Improving Inter-Node Load Balancing on NUMA Systems," Software: Practice and Experience, Vol. 49, No. 10, pp. 1485-1508.

William Su and Mei-Ling Chiang (2021), "Improving the Inter-node Load Balancing for Multi-threaded Applications on NUMA Multi-Core Systems," 26th Compiler Techniques & System Software for High-Performance & Embedded Computing (CTHPC), Taiwan, May 2021.

Mei-Ling Chiang and William Su (2021), "Thread-Aware Mechanism to Enhance Inter-Node Load Balancing for Multithreaded Applications on NUMA Systems," Applied Sciences, 11(14), 6486; <https://doi.org/10.3390/app11146486>.

During load imbalance of multi-core systems, trade-off exists between keeping the CPU affinity, and load balance. For higher CPU utilization, Linux kernel will migrate tasks among cores to keep load balance. However, the load balancing mechanism may incur costly remote memory access on NUMA systems. Selecting the different tasks for migration across NUMA nodes may cause different amounts of remote memory access. We found out using the task memory consumption on each NUMA node can help to decrease the possible remote memory access incurred during task migration as system load imbalance. For multi-threaded applications whose thread members share memory pages, another method to consider the distribution of thread groups on each NUMA node also improves the task migration policy on NUMA systems.