GOKUL VASAN

Embedded Linux [Kernel] Developer

🏠 272. Landsberger-Strasse, Laim, München,Germany

📱 (0176) 8037 5228

@ gokulvas@gmail.com

Ⓦ gokulvasanblog

in /in/gokul-vasan-7610b511/

◯ gokulvasan

PROGRAMMING

C • OOC

Yocto • Bitbake • Make

Git

C++ • Python • Quartz • Shell script

LINUX SUBSYSTEM

MemoryManagement

locking • Diagnostics • LITMUS-RT

Scheduler • Signalling

USERSPACE PLATFORMS

Cisco's Reference Platform • E-Gold

LG-Wise

RTOS

OSEK • OSE166

Micro C OS II

```
0   1   2   3   4   5
```

- 0-1 : Novice (Needs help)
- 1-2 : Advanced beginner (Comfortable)
- 2-3 : Competent (independent)
- 3-4 : Proficient (tutor)
- 4-5 : Expert (visionary)

Education

2014 - 2017	**MSc., Informatik** (GPA: 2.0)	Technishe Universitat kaiserslautern , Germany
	Specialisation: Embedded systems	
2002 - 2006	**BTech.,Information Technology** (GPA: 2.0)	Anna University, India
2006-2007	**Post Graduate Diploma in Embedded Systems**	Cranes Varsity, India
2008	**Certification on basics of networking**	IIIT-B, India
2011	**Certificate course on Linux Device Drivers**	emertexe, India

Experience

💬 **6.5** Years industrial experience + **2.5** Years Research assitant

Company	Duration	Designation
Chair of Real Time Systems @ TUKL	Sep 2014 - Jul 2017	Research assistant (HiWi)
CISCO Sytems	Aug 2011 - Feb 2014	Software engineer II
LG Electronics	June 2008 - July 2011	Senior Software engineer
Cranes Software Systems(LGE)	Sep 2007 – June 2008	Trainee

Awards

- **"Spark award"** from CISCO sytems.
- **"Certificate of Excellence"** from LG Electronics.
- **"Award for Innovation"** from LG Electronics.

Patent and Publications

- **Patent:** Method for making buzz call (Indian patent number: 2235/CHE/2009).
- **Poster presentation:** Download accelerator at DevCon Monacco from Cisco Systems.

Personal information

Nationality	Indian
Date of birth	07 January 1985
Proficient language	English, Tamil and telugu.
Novice language	German

Projects

Tools Created
Quiescent aware task en-queuing [QUITE] • Generic kernel module that enqueues less important tasks only when the real payload is below a **specified** cut-off threshold. • specified threshold is made task specific criterion.
Job table generator and parser for slot shifting scheduler • Uses UUnifast and Ripoll to generate tasks. • Generates job table and creates interval table from tasks for slot shifting scheduler.
Software watch dog • Hrtimer based kernel implementation. • Generic framework to which task registers, sets and resets. • If task doesn't reset within the registered time, core dump is collected by diagnostics framework.
Heap analyzer for E-Gold platform • Tool which logs the heap status whenever malloc and free. • Logs Filename, line number, Date with time when heap fails to allocate.
Ulog: Controlled Syslog interface • Online switch for user space module logging.
Lockless fifo based seperate kernel trace tool • Separate logging mechanism for debugging schedulers and memory management.

Project name	**Use programme phase to dynamic watermark in page reclamation algorithm in Linux kernel**
Company/Institution	Master thesis @ TUKL [Micro electronics group]
Software approach	Agile
Platform	Linux
Language and tools used	C, Git, Yocto

Description and contribution:

* Online programme phase detection algorithm to trigger page reclamation.
* Design and implement a new resource stealing policy for page reclamation algorithm.
* Design and implement double chance algorithm, an approach to avoid thrashing.

Project name	slot shifting scheduler implementation in Linux kernel (LITMUS-RT patch)
Company/Institution	Research assitant @ TUKL [chair of real time systems]
Software approach	Agile
Platform	Linux
Language and tools used	C, Git, busybox

Description and contribution:

* Design and implement slot shifting scheduler for LITMUS-RT based Linux kernel.
* Make the slot shifting scheduler into generic framework independent of OS, with portability wrappers.
***source Link:** gokulvasan/Slot-shifting-in-LITMUS-RT-Kernel-2.6.

Project name	Capacity shifting: Optimization of slot shifting by desynchronizing slots
Company/Institution	Research assitant @ TUKL [chair of real time systems]
Software approach	Agile
Platform	SimSo
Language and tools used	Python, Git

Description and contribution:

* Design and implement desynchronized slot shifting scheduler called **capacity shifting**.
* On average scheduling overhead is reduced by 40% and in best cases overhead is reduced by 60%.
***source Link:** gokulvasan/capacity shifting.
***Paper:**slideshare/capacity shifting

Project name	Improve slot shifting's aperiodic task guarantee algorithm performance from O(N^2) to O(N)
Company/Institution	Research assitant @ TUKL [chair of real time systems]
Software approach	Agile
Platform	SimSo and Linux kernel
Language and tools used	Python, Git

Description and contribution:

* Make use of off-line spare capacity computation to improve the existing online performance of aperiodic guarantee algorithm.
* Asymptotically reduced computation from O(N^2) to O(N), where N is length of relation window.
* Improved performance and eased implementation.
***source Link:** gokulvasan/capacity shifting/guarantee algorithm.

Project name	File Browser for Infineon's E-Gold
Company/Institution	LG Electronics
Software approach	Waterfall model
Platform	IFX E-Gold (OSE166)
Language and tools used	C and clearcase

Description and contribution:

* Implemented a common MIDI, MP3, JPEG support interface for File Browser.
* Implementation of Radix sort for display.
* Filter support mechanism, On-Click execution.

Project name	Mp3 driver, middleware and player implementation in Infineon E-Gold platform
Company/Institution	LG Electronics
Software approach	Waterfall and Agile [Hybrid approach]
Platform	IFX E-GOLD, OSE166
Language and tools used	C, Clear case

Description and contribution:

* Owner of the whole MP3 module.
* Solely designed and scripted the mp3 player from scratch as a whole.
* Implementation includes: File system traversal, ID3 V1 and V2 parsing, Display sorting .

Teams

Team name	Diagnostics and Linux kernel team
Company/Institution	Cisco Systems
Software approach	Kanban
Platform	Reference platform, Linux kernel
Language and tools used	C, C++, Git, OpenEmbedded, Code collaborator, CDETS

Roles and Responsibilities:

* Back porting linux kernel patches.
* Fix issues related to platform Diagnostics module.
* Hardening the software stability by introducing new debugging features.
* Integrating busybox into platform.
* Energy star compliance certification.

Team name	BSP Team
Company/Institution	LG Electronics
Software approach	Waterfall
Platform	Android(V1.5) and Linux kernel
Language and tools used	C, Git.

Roles and Responsibilities:

* Porting linux kernel to new hardware platforms.
* Fix issues related to call related RPC.
* **Chipset:** OMAP4430, MSM7x27 .

Team name	Call Team
Company/Institution	LG Electronics
Software approach	Waterfall
Platform	E-Gold, LG-Wise, **RTOS:** OSE166, Nucleus
Phone Models	LG7, Ruby, Angela (GS155), GB130, Spring Roll (GU200), GB125, Papaya (T300), Plum (T310).
Language and tools used	C, C++, clear case

Roles and Responsibilities:

* Fix call 3gpp standard related protocol issues.
* Member and coordinator of Code review committee.
* member of Wise optimization platform.

Team name	Lab coordinator @ Real time systems Lab
Company/Institution	chair of Real time systems @ TUKL
Software approach	None
Platform	Linux, OSE
Projects	synchronization techniques, Device Drivers, SCHED_DEADLINE, Cgroups, RTOS applications & resource aware RTS.
Language and tools used	C, C++, clear case

Roles and Responsibilities:

* Coordinate and tutor students.
* Propose and design new projects.
* Prepare questionnaire for exam.

I hereby declare that all the information above is true to the best of my knowledge.

Date:

Yours truly,
L.J.Gokul vasan