KAMAL LAMICHHANE

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EDUCATION

University of Waterloo, Waterloo, ON Canada *Aug 2017*
MASc in Electrical & Computer Engineering, Computer Software
Major in Embedded Systems & Software; Overall Percentage: 86 %
Algorithm Design and Analysis, Design and Analysis of Experiment, and Computer Aided Verification.

Nitte Meenakshi Institute of Technology, Bangalore, India *May 2015*
B.E. in Electronics &Communication Engineering
Major in Embedded System, Circuits & System
Overall GPA: 9.73, **Gold metal, Dept. of ECE**

St. Lawrence Higher Secondary School, Kathmandu, Nepal *Sept 2010*
HSEB (Class XI, Class XII)
Physics, Chemistry, Mathematics, Biology
Overall Percentage: 81.8 %, **Second Position** in College

Shree Pradyumna Paneru Higher Secondary School, Syangja, Nepal *July 2008*
SLC (Class X)
Science, Mathematics, Computer Science
Overall Percentage: 80.1 %, **First Position** in School, District Topper

EXPERIENCE

Functional Safety Engineer-Intern May 2016 -August 2016
Automotive Functional Safety(ISO-26262) *Toronto, Canada*

- Working in Automotive Functional Safety.
- Working in Embedded Software Optimization for ADAS.

Graduate Research Student, UW Sept 2015-
Specification Based Bug Detection for Embedded Software *Waterloo, Canada*

- Evaluated the impact of runtime checks on program performance for the developed Bug detection platform.
- Compared the run-time overhead of the program using two compilers; Avr-GCC and Avr-LLVM with and without the instrumented code using RAPITA tools.
- Found Significant results of runtime overhead using statistical analysis of WCET.

Non-Intrusive Co-operative System Tracing Through Power Consumption. *Waterloo, Canada*

- Implemented Co-operative multitasking operating system for AVR (atmega2560).
- Performed Non-Intrusive Co-operative multi-tasking OS Program tracing using Power Consumption.

- Analysis part is in progress.

Technical: AVR, C, C++, Python, LLVM, Machine Learning.

Undergraduate Research Student at Center for Small Satellite Research July 2014-2015
Command & Data Handling for Project STUDSAT-2 *Bangalore, India*

- Implemented Real Time operating system using FreeRTOS with sixty four uniquely identified Task for the proper operation of the satellite right from the ejection; which also helped in proper development of operational flow of the Project.
- Performed RTOS Evaluation; RAM overhead equations with kernel object & configuration, CPU processing Overhead test(overhead for a tick, for a periodic task, and to trigger a task from an ISR), and Total RTOS CPU Overhead Analysis.
- Developed Mission sequence for Project STUDSAT-2 right from ejection from PSLV till the end of life time of the satellite, meeting all the space constraints and specification of the project.
- Closely involved in HW/SW Integration of the overall project.
- Co-operated with Communication team to design the link budget for UHF and VHF range.

Technical: FreeRTOS, C, C++, Matlab Simulink, ARM-Cortex-M4, Communication Protocols, HFSS.

Indian Institute of Science May-July 2014
Summer Research Fellowship Program-2014, Antenna Designing & Modelling *Bangalore, India*

- Designed, simulated and tested four wideband antennas (Vivaldi, Sinuous, Microstrip, Multi-arm Spiral Microstrip) for an aircraft application.
- Designed Vivaldi antenna showed remarkable a performance over the entire frequency range of 2.5 GHz to 4 GHz with return loss to be 1.2 and gain 10 dBi.
- The wideband multi arm spiral mode microstrip antenna has been shown to operate as a conformal, multifunctional antenna with multiple beams covering the entire hemisphere; also proven to be used for an application such as angle of arrival estimation and adaptive nulling at the element level.

Technical: CADFEKO, Matlab, HFSS, C.

Technophilia Systems, RCAI, CMU, USA June 2013
Advance Robotics *Bangalore, India*

- Successfully conducted hands-on experiments on interfacing of different peripherals and I/O devices (acceleration sensor, optical sensor, analog sound sensor, matrix LED display module, IR wireless communication module, relay board used in home and industrial automation systems).
- Developed Line follower Robot, DTMF controlled Robot, Wireless controlled Robot, Brain wave controlled & Home Automation System.

Technical: C, C++, ROBOT C, Cadence, Arduino

TEACHING ASSISTANT

Graduate Teaching Assistant, UW Jan 2016-April 2016
Operating System, SE-350 *Waterloo, Canada*

- Designed a simple operating system (OS) which provides a basic multiprogramming environment, with five priority levels, preemption, simple memory management, message-based interprocess communication, a basic timing service, system console I/O and debugging support.
- Evaluated quizzes, exams and lab project (RTX project in LPC 1760)

- Delivered in-class tutorials for lab project.

Technical: ARM, C, C++.

TECHNICAL: STRENGTHS

Programming	C/C++, Python, Java, ALP, VHDL, and HTML5
Processing Platforms	x86, Arduino, MSP430, ARM Cortex M4, ARM A8, and Atmel.
Statistical tools	R, and SAS
Operating Systems	Unix, Linux, Embedded Linux, Windows
Tools	Tanner Tools,TINA,Eclipse,Xilinx ISE,Pspice,Keil,Modelsim,FEKO.

GRAD COURSE PROJECTS

- **Course: Design and Analysis of Experiment; Title : Quality of Control of the ADAS Car-on-Treadmill** - Designed an experiment evaluate the quality of the control of the ADAS car in the Treadmill. Various factors which affects the quality of control of the ADAS car are studied and analysed.

RELEVANT PUBLICATIONS

Actuation System Design and Payload Operation Flow for STUDSAT-2. IAC 2015
*Sandesh Hegde, Kannan T,***Kamal Lamichhane***, and Sandya S. In the Proceedings of the 66th International Astronautical Congress, Israel. October, 2015.*

Embedded RTOS Implementation for Twin Nano-Satellite STUDSAT-2 IEEE 2015
Kamal Lamichhane*, Kiran M, Kannan T, Sandya S; Embedded RTOS Implementation for Twin Nano-Satellite STUDSAT-2, 2nd IEEE International Conference on Metrology for Aerospace, 978-1-4799-7568-6/15//31.00 2015 IEEE June 4-5, 2015, Benevento, Italy.*

Operational Flow for Twin Nano-Satellite Mission IEEE Metrology June 2015
Kamal Lamichhane*, Kiran M, Kannan T, Sandya S; Operational Flow for Twin Nano-Satellite Mission, 2nd IEEE International Conference on Metrology for Aerospace, 978-1-4799-7568-6/15//31.00 2015 IEEE June 4-5, 2015, Benevento, Italy.*

Implementation and Comparative Study of Algorithms to Avoid Obstacles in Mobile Robot Navigation July 2014
Min Raj Nepali, Amar Mani Aryal, Ashutosh and **Kamal Lamichhane***. Implementation and Comparative Study of Algorithms to Avoid Obstacles in Mobile Robot Navigation. International Journal of Computer Applications 97(11):13-18, July 2014.*

Early Breast Cancer Detection Using Statistical Parameters March 2014
H.C.Nagaraj, Prasanna Paga **Kamal Lamichhane***. Early Breast Cancer Detection Using Statistical Parameters. IMPACT: International Journal of Research in Engineering Technology (IMPACT: IJRET) ISSN(E): 2321-8843; ISSN(P): 2347-4599 Vol. 2, Issue 3, Mar 2014, 31-36.*

Microcontroller-Based Remote Locator ELSEVIER August 2014
Kamal Lamichhane*, Ashwin Chapte, M. Kiran and Avanee Bhat, Aug 2014, Microcontroller-Based Remote Locator, ERCICA 2014 - Emerging Research In Computing, Information, Communication And Applications. ISBN: 9789351072638 ELSEVIER India.*

Intelligent Wireless Video Monitoring System Using Computer IRAJ July 2014
Kamal Lamichhane*, Kiran .M, Avanee Bhat M V, Ashwin Chapte, Prasanna Paga, Intelligent Wireless Video Monitoring System Using Computer, International Journal of Industrial Electronics and Electrical Engineering, ISSN: 2347-6982, Volume-2, Issue-7, July-2014,***Best Paper Award***.*

IP Based Distributed Smart Camera Surveillance System December 2013
Kamal Lamichhane, *Shreeyak S. Sajjan, Huggi Pooja, Rajesh N. IP Based Distributed Smart Camera Surveillance System for Forest Application. International Journal of Electronics Engineering, ISSN : 0973-7383. No.5 (2013) Issue No. :2 (2013).*

WORKSHOPS AND TRAINING ATTENDED

- **ISO 26262**- Functional Safety Certified Candidate from OMNEX Inc.
- Completed the ExpecTAtion Workshop (Teaching Assistanceship Workshop) at the University of Waterloo, Canada. Sept, 2015.
- Attended 25th Mid-Year Meeting of Scientific Lecturers and symposium at IISc organized by Indian Institute of Science, Bangalore.
- Attended 2nd IEEE International Workshop on Metrology for Aerospace (MetroAeroSpace 2015), Benevento, Italy.
- Two weeks International internship on Advance Robotics using ROBOTC from Technophilia Systems. Certified by Robotics Computer Application, Institute of USA.
- Attended workshop on IT Security and Ethical Hacking-3 days organized jointly by Java Systems IEEE NMIT.
- Attended workshop on Embedded Systems by Industry Experts-1 day organized by IEEE at NMIT.
- Attended workshop on Digital Image Processing-2 days organized by Scientific Computing Solutions at Madurai.

ACHIEVEMENTS AND EXTRA CURRICULAR

- Awarded ENG Senate Graduate Scholarship from the University of Waterloo.
- Currently holding Graduate Research Scholarship and International Master's Student Award from the University of Waterloo.
- Received Gold Medal from the Electronics and Communication department, Nitte Meenakshi Institute of Technology, in Bachelor of Engineering.
- Project "Smart-Helmet to Avoid Accident" is accepted in Texas Instruments Innovation Challenge India Design Contest 2015.
- Granted Full scholarship to pursue B.E from Embassy of India, Kathmandu Nepal. (Entrance -13th Rank).
- Awarded Academic Excellence Award in all semesters with overall GPA 9.75 in B.E, Electronics and Communication Engineering.
- Awarded Academic Excellence Award for being Second topper in college Intermediate level securing 82%.
- Awarded Golden Jubilee scholarship from Embassy of India to pursue Bachelor of Science in Nepal.
- Awarded by Lions Club of Pokhara for securing highest marks in SLC among Government Schools.
- Won first prize on Robotics Competition at National Level Techno-Cultural fest Anadyanta 14.

POSITION OF RESPONSIBILITY

- Microsoft Student Associates-2014 for Bangalore.
- Headed IEEE NMIT Student Chapter for Academic Year 2014-2015.

- Headed IEEE NMIT as **Technical: Head** at National Level Tech Fest SERO- 14.
- Organized National Level fest "Anaadyanta" at Nitte Meenakshi Institute of Technology.
- Served Nitte Technical Team as a Technical: Head for academic year 2014-15.

SEMINARS AND TALKS

- A Real-time Industrial Model using Time Processed Automata, presented at the University of Waterloo. Waterloo, Canada. November, 2015. (ECE-725 talk)
- Embedded RTOS Implementation for Project STUDSAT-2, presented at the University of Sanio. Benevento, Italy. June, 2015. (IEEE Conference Presentation)
- Operational Flow for Twin Nano Satellite Mission, presented at the University of Sanio. Benevento, Italy. June, 2015. (IEEE Conference Presentation)
- Command & Data Handling for nano satellites, presented at Nitte Meenakshi Institute of Technology. Bangalore, India. May, 2015. (Bachelor's Thesis presentation)
- Micro-controller Based Remote Locator, presented at 2nd International Conference on Emerging Research In Computing, Information, Communication And Applications. Bangalore, India. August 2014. (Conference Presentation)
- Performance Analysis Of Rectangular Patch Antenna Using Quarter Wave Feed Line And Coaxial Feed Line Methods For C- Band Radar Based Applications., presented at International Conference on Academic Research in Engineering, Science And Technology, Bangalore, India. February, 2015. (Conference Presentation)
- Mutual Coupling Reduction Between Planar Microstrip Patch Antennas By Using A Electromagnetic Band Gap Structures., presented at International Conference on Academic Research in Engineering, Science And Technology, Bangalore, India. February, 2015. (Conference Pesentation)
- Intelligent Wireless Video Monitoring System Using Computer, presented at the IRF International Conference. Bangalore, India. March 2014. (Conference Presentation)
- Overview of Raspberry-Pi, presented at Nitte Meenakshi Institute of Technology. February, 2013. (Invited Talk)
- Home Automation System using DTMF, presented at Nitte Meenakshi Institute of Technology. Oct., 2012. (Invited Talk)

For Resume, Please Follow: **http://www.lamichhanekamal.com.np/Docs/Resume.pdf**