Pavan M

Personal Data

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Publications

- Santhi Natarajan, Krishna kumar N, **Pavan M**, Debnath Pal and S K Nandy
  "ReneGENE-DP: Accelerated Parallel Dynamic Programming for Genome Informatics" presented in IEEE international conference on Electronics, Computing and Communication Technologies (CONECCT-2018), Bangalore 2018

Work Experience

Summer
May 2017 - July 2017

Research Intern at Indian Institute of Science Bangalore
Supervisor: Prof. SK Nandy, Department of CDS, IISc
Developed ReneGENE-VC, an accurate Variant Calling Software, for genomic big data analysis pipeline. Came up with a statistical variant data comparison pipeline based on the alignment data from various short reads mappers and variant data from multiple variant calling tools.

Winter
December 2017

Research Intern at Indian Institute of Science Bangalore
Supervisor: Prof. SK Nandy, Department of CDS, IISc
Worked on ReneGENE-DP (Dynamic Programming), parallelised SMITH WATERMAN ALGORITHM *on GPU using CUDA and openCL (Parallel computing platforms) and integrated with ReneGENE Pipeline.*

Summer
May 2018 - July 2018

Summer Internship at Samsung R&D Institute Bangalore

Worked on Android Dynamic Class Loading. Improvised the way how Samsung's MyGalaxy App opens other app modules (like wynk music) by dynamically loading classes on runtime.

Education

2015 onwards Bachelor of Technology in **Electronics and Communication Engineering**
National Institute of Technology Karnataka (NITK), Surathkal
7th semester CGPA: 8.00

May 2015 Senior Secondary School, **Karnataka State Board**
Percentage: 92.6%

May 2013 Secondary School, **Indian Certificate of Secondary Education (ICSE)**
Percentage: 93.67%

Technical Skills

Programming Languages: C, C++, Java, Assembly, VHDL
Parallel Programming API: MPI, CUDA, openCL, stdCL
Embedded Platforms: Arduino, MSP430
Design Platforms: LTSpice, Eagle, ngSpice, Proteus, Magic, IRSIM
Miscellaneous Tools: Xilinx, Vivado, Keil microvision, MatLAB, LATEX

PROJECTS

Moisture content of Cashew
Mar 2017 - Aug 2017

Analog System Design, Department R&D Project NITK
Supervisor: Prof.U Shripathi Acharya, HoD, Department of ECE,NITK
Dr. T Laxminidhi, Department of ECE, NITK

Moisture is a dielectric material therefore Capacitance method is used to determine the amount of moisture content in cashew. A circuit was designed such that change in capacitance is linear with increase in Moisture. This linear change in capacitance was utilised to estimate the percentage of moisture.

Real Time Moving Object Detection
Aug 2017 - Nov 2017

Digital System Design

Implemented a real time moving object detection algorithm on fpga. We used background subtraction method and its FPGA implementation in surveillance video applications. In this method, we used static camera for capturing video and first frame of video is directly consider as reference background frame and this reference background frame is subtract from current frame to detect moving object. The difference in the frame pixels gave us an estimate where and all the values have changed. If the values were greater than the Threshold then there was a moving object in that Particular part of the frame.

Travelling Salesman Problem
Nov 2017

CUDA Platform

A traveller needs to visit a list of cities. Coordinates of the cities are known to us. We need to find the sequence in which he needs to travel so that he'll cover all the cities and by taking the shortest path. We developed a parallel algorithm to implement this problem statement using Cuda on Nvidia GPU. We used Two-opt method *(heuristic) to obtain the shortest path.*

LED WALL
Oct 2016

Embedded Systems

As a part of Engineer 2016, Technical fest, I worked on this project. The led lights acts like an equalizer and dances with the beats. The audio is converted into bitstream using a MSP430, UART, and send to a shift register which is used as led driver to switch on and off led.

Achievements

- All INDIA General knowledge exam 12th rank. (2012).
- 3rd place in 800m state level athletics.
- Recipient of the Best Student award in high school, 2011
- Best Paper award (IEEE paper)
- Samsung Appathon Runner up.

Positions of Responsibility

- Executive member of IE, NITK
- Technical committee (Technites) member in university-level fest Engineer 2016.
- Network councillor at college(NITK) (2015-16)
- Joint Convenor of Corporate Hospitality in Incident 2018 (Cultural Fest)
- Class representative at college (NITK) (2016 - Present)