

# Kajal Varma

Address: Bangalore, India

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## EDUCATION

- Birla Institute of Technology and Science, Pilani**, K.K. Birla Goa Campus, India Aug 2012 – May 2016
- **B.E. (Hons.) Computer Science, CGPA: 8.64 / 10.0**
  - Courses: Operating Systems, Computer Architecture, Data Storage Technologies and Networks, Computer Networks, Data Structures and Algorithms
- National Public School, Indiranagar**, Bangalore, India Jun 1998 – Mar 2012
- Grade XII: 97.6%, Grade X: CGPA 10.0 and percentile 99.9946

## PUBLICATIONS

**K. Varma**, G. Patil and B. Raveendran, "DTLB: Deterministic TLB for Tightly Bound Hard Real-Time Systems," 2017 30th International Conference on VLSI Design and 2017 16th International Conference on Embedded Systems (VLSID), Hyderabad, 2017, pp. 207-212.

## RESEARCH EXPERIENCE

- Thesis – Energy Estimation of High Performance Computing Applications** Jan 2016 – Jun 2016
- Guide: Dr. Santonu Sarkar, Dept. of CS & IS, BITS Pilani Goa Campus
- Research thesis on estimation of energy consumption of parallel CUDA (Compute Unified Device Architecture) programs run on NVIDIA GPUs, by predicting execution time and power level.
  - Constructed a static analysis model for compiled Parallel Thread Execution (PTX) code and modelled thread execution to predict execution time. Constructed a power model by benchmarking.
- Real-Time Operating Systems – Memory Design** Jan 2015 – Dec 2015
- Guide: Dr. Biju Raveendran, Dept. of CS & IS, BITS Pilani Goa Campus
- Research project proposing a deterministic TLB and process-aware partitioned cache design to eliminate inter-task interference, lower miss rates, and reduce energy usage.
  - Implemented MemSim, a single-clock-cycle memory subsystem simulator for experimental validation.
- Real-Time Operating Systems – Scheduler Design** Jan 2015 – Dec 2015
- Guide: Dr. Biju Raveendran, Dept. of CS & IS, BITS Pilani Goa Campus
- Implemented an improved scheduling algorithm based on the Earliest-Deadline-First algorithm and modified with Stack Resource Policy and dynamic resource locking.
  - Enabled slack time extension for concurrent real-time tasks, minimizing the number of context switches for real-time tasks and leading to energy savings.

## WORK EXPERIENCE

- Software Engineer II – Intuit, Bangalore, India** Feb 2018 – Present
- Cross-platform library and application developer for the TurboTax Desktop product on Windows and MacOS.
- Software Engineer I – Intuit, Bangalore, India** Aug 2016 – Jan 2018
- Designed and developed key business features such as a re-architecture contingency module and a re-imagined collaboration experience on TurboTax for Mac.
  - Owned the development of a standalone C++ library for use across Intuit teams and products.

## **Summer Intern – Intuit, Bangalore, India**

May 2015 – Jul 2015

- Integrated location-based features into the TurboTax Universal Android application and built automation tools.

## **PROJECTS**

### **Raspberry Pi Surveillance System with Android Interface**

Oct 2015 – Nov 2015

### **Linux Kernel Mouse Device Driver Implementation**

Mar 2015 – Apr 2015

### **Simulation of DiskSim Scheduling Algorithms**

Mar 2015 – Apr 2015

### **Phased Cache Memory Design and Simulation**

Oct 2014 – Nov 2014

### **Garbage Collector Simulation for Memory Management**

Aug 2014 – Dec 2014

### **Battleship Network Game**

Oct 2015 – Nov 2015

## **ASSISTANTSHIPS**

### **Teaching Assistant – Computer Architecture**

Aug 2015 – Dec 2015

Instructor: Dr. Biju Raveendran, Dept. of CS & IS, BITS Pilani Goa Campus

- Conducted laboratory sessions and evaluated course projects.

### **Professional Assistant – Computer Programming**

Jan 2015 – May 2015

Instructor: Mr. Mahadev Gawas, Dept. of CS & IS, BITS Pilani Goa Campus

- Conducted and evaluated laboratory sessions.

## **SKILLS**

- **Programming and Tools:** C, C++, bash, Java, Python, Git, Latex
- **Environments:** Linux/UNIX, Windows, MacOS

## **HONORS AND ACHIEVEMENTS**

**Winner** – Intuit HackUtsav 2017, Intuit, India

Jul 2017

**Course Topper** – Data Storage Technologies and Networks

May 2015

**All-India Rank 17** – National Cyber Olympiad, India

Jun 2011

## **EXTRA CURRICULAR**

Department of Creative Media, Mime Club, Department of Photography – BITS Pilani Goa Campus

Vice Prefect – National Public School