

# GAYAM PRADEEP KUMAR

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## Fields of Interests

Distributed Systems, Linux Containers

## Education

**Indian Institute of Technology, Roorkee**  
Master of Science in Applied Mathematics

July 2007 – May 2012  
(Five year Integrated Degree Program)

## Work Experience

### **Distributed and Object Systems lab, IIT Madras**

*Position:* Project Associate

*Duration:* June 2017 to May 2019

*Details:* Developed system call filters for Linux kernel to control radio functionality on Android devices. Implemented a decentralized application(DApp) using smart contracts on Ethereum for trust-less management of data.

### **HackerEarth Technologies Pvt Ltd.**

*Position:* Product Manager

*Duration:* February 2015 to January 2017

*Details:* Developed asynchronous email delivery infrastructure which handles delivery of over million emails per week. Implemented high throughput, low latency request logging mechanism on web servers. Tuned MySQL and Apache to keep response time under 200ms while serving 2 million requests per day. Led a team of engineers to develop several projects. Contributed to architectural and design decisions.

### **UrbanPiper**

*Position:* Consultant

*Duration:* December 2014 to January 2015

*Details:* Tuned MySQL database for better performance and developed a search framework on customer data for quick search results. Integrated Elasticsearch, Logstash, and Kibana(ELK) for easy dashboard creation based on Apache logs.

### **PayPal India Pvt Ltd.**

*Position:* Software Engineer

*Duration:* July 2012 to December 2013

*Details:* Developed microservices to manage withdrawal limits for merchants and notification services to notify the users when the withdrawal limits are crossed.

## Publications

**A Framework for Detecting and Preserving Significant Events in Smart Cities** : Dharanipragada Janakiram, Gayam Pradeep Kumar and Arun Raj : *IUIDS 2018: Second International Workshop on Urban Data Science.*

## Research Experience

### **Mandatory Access Control framework for Linux kernel based on system call filters**

*Mentor:* Prof. Dharanipragada Janakiram, Indian Institute of Technology, Madras

*Workplace:* Indian Institute of Technology, Madras

*Duration:* June 2017 to present

*Details:* Evaluated the idea of using Linux system call entry point as a viable control point to enforce security policies. Developed system call filters to control radio functionality on Android devices using Minimalistic Object Oriented Linux(MOOL) kernel.

## Open Source Software Contributions

### **Google Summer of Code**

*Position:* Author, Programmer

*Duration:* May 2011 to August 2011

*Details:* Worked on Buildbot which is a Python-based continuous integration testing framework. Improved the consistency and efficiency of the system by moving checkout logic to client from server.

### **Google Summer of Code**

*Position:* Author, Programmer

*Duration:* May 2010 to August 2010

*Details:* Worked on project called RevlogNG(Next Generation Revision Log) to improve memory footprint of the repository on the disk by implementing directed acyclic revision graphs instead of linear revisions.

## Scholarships & Awards

### **Innovation in Science Pursuit for Inspired Research (INSPIRE)**

2008 – 2012

Awarded Innovation in Science Pursuit for Inspired Research (INSPIRE) scholarship by the Department of Science and Technology, Govt of India for perusing basic science in Indian Institute of Technology.

### **Annual Excellence Award**

2009

Won Annual Excellence Award – 2009 for outstanding Academic, Co-Curricular and Extracurricular achievements by IIT Roorkee Heritage Foundation.

## Extracurricular Activities

### **Information Management Group(IMG)**

2008 – 2012

Selected to IMG as a Project Leader and later promoted to System Administrator. IMG is a student body that builds solutions for IIT Roorkee's technical needs.

### **Aquatics Team**

2008 , 2009

Member of the Institute Aquatics team that won silver medal in Water Polo in Inter IIT Sports Meet – 2009. Winner of the *Best Fresher Swimmer* for the year 2008.