

Kushal Singh

PERSONAL DATA

PLACE AND DATE OF BIRTH: Morena, India | 18 September 1995
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WORK EXPERIENCE

Current	GOOGLE CODE-IN Mentor for HAIKU <i>Student Developer and Mentor for Haiku</i> Working as a contributor and Mentor for Haiku (a BeOS based operating system) as a part of Google Code-In program, which aims to introduce Pre-University students to the world of open source.
AUG-DEC 2015	Teaching Assistant at IIIT-Hyderabad <i>Teaching Assistant for Operating Systems Course</i> Worked as a Teaching Assistant for the Introductory level Operating systems course in the Monsoon Semester and worked with MIT-based operating system XV6 during the course.
MAY-AUG 2015	Summer Intern at GOOGLE SUMMER OF CODE <i>Student Developer for RIOT-OS</i> Developed module for adding dynamic linking support for RIOT-OS to allow the software to be updated at run-time. The work mainly focused on creating an ELF-parser to fix the addresses used within and across modules for SAMR21-Xplained Pro and Arduino-Due boards.
JAN-MAY 2015	Research Assistant, Dr. Suresh Purini, SERC <i>Dynamic Resource Allocation for Containers</i> Worked on the problem of resource bidding in containers using external agents for dynamic resource allocation in containers. The work mainly focused on creating a small agent for the management of the resources.

EDUCATION

2013-2017	B.Tech in COMPUTER SCIENCE AND ENGINEERING, IIIT-Hyderabad, India CGPA: 9.0/10
2012-2013	Senior Secondary Examination, Indore Public School, Indore, India PERCENT: 95.4%
2010-2011	Secondary Examination, Kendriya Vidyalaya, Katni, India CGPA: 10

PROJECTS

CI/CD Pipeline with Docker, Cloud Computing

Developed a build system that leverages Docker for implementing Continuous Integration and Delivery pipeline. The project allows git commits to start off packaging a Docker image after successful build and provision it directly in a VM.

Cloud Orchestration Layer, Cloud Computing

Created a cloud orchestration layer using libvirt and ceph. This includes creation, deletion, querying and scheduling of virtual machines in a network.

Compiler for Decaf Programming language , Compilers

Created both frontend and backend of a compiler for decaf programming language. The project mainly focused on syntax analysis, semantic analysis and IR generation.

Tic-Tac-Toe bot, Artificial Intelligence, Dr. Praveen Paruchuri

Created a bot for ultimate tic-tac-toe game to compete with other bots in a tournament. Min-Max tree and Alpha-Beta pruning were used here to simulate optimal game-play.

Carrom and Top Shooter Game, Graphics, Dr. Anoop Namboodiri

Created a two player carrom game and a spinning top game using OpenGL2 as a part of Graphics course.

Gamification Platform, Fortuity, Hyderabad

Worked on creating a gamification engine for a startup called Fortuity with standard gamification mechanics using RabbitMQ, SQLAlchemy and Python Gevent libraries.

Elementary bash shell, Dr. Suresh Purini

Created a bash shell which supported basic features like redirection, piping and certain commands like time as a part of operating systems course.

MINI-PROJECTS

Database Management System, Introduction to Database

Created a small database management system which supported all the basic operations needed for functioning of a mall using PHP and MySQL.

Skynote-Note Application, Introduction to Information Technology

Created a small web based application using web2py to manage notes using browser local-storage. The application allowed users to create, manage and sync notes.

ACHIEVEMENTS

- 2013-2015 Listed in Dean's Merit List for academic excellence in every semester and awarded distinction for being in top 5%
- 2013 Ranked 737 in IIT-JEE Mains amongst 1.3 million people who appeared for the exam.
- 2013 Ranked 1st in state and 92nd in India in the IIT-JEE Mains aptitude test amongst 10 lakh people who appeared for the exam
- 2013 Awarded CBSE Inspire Scholarship for academic excellence in board exams.
- 2012 Top 1% in the Physics Olympiad conducted by HBSCE.
- 2009-2011 Awarded Gold Medal for being the zonal topper in National Maths Olympiad.

COMPUTER SKILLS

Operating System : LINUX, OSX, WINDOWS, HAIKU
Database Management : MYSQL
Programming Language : C, C++
Scripting Language : PYTHON, BASH
Web Technology : PHP, HTML, CSS, JAVASCRIPT, WEB2PY
SDN Tools : MININET
Version Control : GIT

INTERESTS AND ACTIVITIES

Operating Systems : A contributor to Haiku and RIOT-OS operating system projects.
Competitive coding : Solving algorithmic problems in free time.
Sports : Cycling and playing Football.