Karthik R

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Education

- **National Institute of Technology, Calicut** — Calicut
  Bachelor of Technology in Computer Science and Engineering — *July 2007 – April 2011*
  - CGPA : 8.52
  - Key Courses : Operating Systems, Computer Architecture, Distributed Computing, Networks, Data Structures and Algorithms, Trends in Middleware Systems, Natural Language Processing, Compiler Design, Principles of Programming Languages, Advanced Graph Theory, Database Systems
  - Achievements :
    * *S Grade* in Major Project, Operating Systems (Course+Lab), Networks (Course+Lab), Computer Architecture, Natural Language Processing
    * *A Grade* in Datastructures and Algorithms, Trends in Middleware Systems, Distributed Computing, Compiler Design

- **Cochin Refineries School** — Ambalamugal
  12th Standard, AISSE 2007 — *June 2006 - Mar 2007*
  - Secured 94.4%
  - AISSE 1st rank in Mathematics, 2nd in Computer Science

- **Cochin Refineries School** — Ambalamugal
  10th Standard, AISSE 2005 — *June 2004 - Mar 2005*
  - Secured 91.6%

Experience

- **Yahoo! Development Ltd.** — Bangalore
  Summer Internship — *May 2010 – July 2010*
  - Worked with the *Creative Tester* Team of Advertiser's Products Group.
  - Designed and developed *ct-adtest-tool*, a tool that ensures the quality of Ad's by dynamically testing them through antiviruses and various Domain Lookup Tools
  - Upgraded an existing tool, *ct-imganalyser* to have extra features that would help the QA team to ban advertisements with adult content
  - Performed QoS tests on an existing tool that performs Domain Lookup Services for the CT Team

Skills

Languages: C/C++, JAVA, Shell Scripting, LaTeX, HTML, CSS

Computer and OS: Proficient in Debian & Red Hat Linux, Windows 9x, XP, Vista, Mac OS X; Virtualization of Windows & Linux guests using Sun VirtualBox and VMWare

Tools: Eclipse, Netbeans, NS-2 Simulator for Network Simulation, MARS

Achievements

- **CodeJam 2011** Winner, conducted by MobMe, Ernakulam.

- First Prize for **IBM Techno-Contest** on *Cloud Computing and Virtualization* conducted during *Tathva 2010*, NIT Calicut

- First Prize for **Slash Bin Slash Bash**, a Linux Shell scripting contest in *Excel 2010*, Model Engineering College

- 2nd for **Terranova**, an event on Managerial skills and finalist in **Tux of War**, an event on Linux Shell scripting during *Tathva 2009*, NIT Calicut

- Web Admministrator for **Tathva '08**, the Annual Techno-Management Fest, and for **Ragam '09**, the Annual Cultural Fest of NIT Calicut

Research and Projects

- **Virtual Machine as a Service for Mobile Cloud Systems**   NIT Calicut
  BTech Major Project, Guide : Sumesh T.A, NIT Calicut   *July 2010 – March 2011*
  - Implemented a new model known as *Virtual Machine as a Service* for Mobile Cloud Systems.
  - A central resource cloud, named *Zeus*, was set up in Software Lab.
  - Mobile devices *buy* Virtual Machines of their desired configuration from *Zeus*.
  - The client VM's can be fully controlled from the mobile device, there by empowering the device to have computation power of an actual system.
  - Resources Used : *Java, Oracle Virtual Box, Sun Wireless Toolkit*

- **Placement of Virtual Machines**   NIT Calicut
  Guide : Dr. Umesh Bellur, Associate Professor, IITB   *Feb 2010 - June 2010*
  - Worked towards the development of a placement algorithm for virtual machines in a data center.
  - The objective function to minimize is the number of physical machines given the current availability of CPU, Memory and I/O Bandwidth of the virtual machines.
  - The problem was mapped as a case of *3D Vector Bin Packing* and an approximate solution was simulated.
  - This is in connection with the Yahoo! - IITB Cluster Lab at IIT, Bombay.

- **Link Prediction in Social Networks**   NIT Calicut
  BTech Mini Project   *Feb 2010 - June 2010*
  - Designed and developed a software package that could be used for Social Network Analysis.
  - Given any graph representing a social network, missing links or connections are predicted based on the existing data
  - The package implements Data Mining and Regression Techniques to mine vast amounts of unstructured data for potentially useful information.

- **Hadoop Cluster**   NIT Calicut
  Distributed Computing   *Feb 2010*
  - Setup and implemented a multi-node Hadoop Cluster
  - Map Reduce algorithm was studied and the clusters performance was tested against standard Map Reduce problems.

- **Bloom Filters - Design and Applications**   NIT Calicut
  Term Paper, Trends in Middleware Systems   *Feb 2011*
  - Explored the design and working of a new datastructure known as Bloom Filters.
  - The various type of Bloom Filters were studied and its applications were also looked at.

- **Programming Models for the Cloud**   NIT Calicut
  Guide :Dr. Madhu Kumar SD, Associate Professor, NIT Calicut   *Feb 2010*
  - Studied the existing programming models for Cloud Architectures.
  - Focus was primarily on Map - Reduce and its variants.

- **Protocol Simulation using Network Simulator NS 2**   NIT Calicut
  Computer Networks   *Nov 2009*
  - Investigated the efficiency of different congestion control algorithms like TCP Reno, TCP Vegas , etc by varying network parameters.

- **Captcha Systems**   NIT Calicut
  BTech Seminar   *Sept 2010 - Oct 2010*
  - Explored through all kinds of Captcha systems used in Computer Networks.
  - Extended versions including Re-Captcha, Captcha for Touch screen devices were also studied.

Course Projects

- **Deployed a compiler for Simple Integer Language (SIL)** NIT Calicut
  Part of Compiler Design Coursework July 2009 – Nov 2009
    - Implemented a C like compiler for a User Defined Typed Programming Language for integers.
    - It runs on a hypothetical machine running on MIPS architecture
    - Includes Pointers, Type Systems, Functions and other concepts of Object Oriented Programming.

- **NACHOS : Toy Operating System** NIT Calicut
  Part of OS Coursework July 2009 – Nov 2009
    - Designed an Operating System on top of an existing framework known as *NACHOS*
    - The various OS concepts like Scheduling, Paging and Semaphores were implemented and performance was studied based on the implementation.

- **Public and Private key Encryption and Digital Signatures** NIT Calicut
  Project, Number Theory ang Cryptography July 2009 - Nov 2009
    - Implemented the AES (Rijndael) block cipher (counter mode), ElGamal-192, RSA-2048 and ECC-192 schemes and DSA algorithm using SHA-1 hash function.

- **Simple Database Management System** NIT Calicut
  DBMS Coursework Dec 2008
    - Created modules of a simple database management system based of UW Madisons Minirel. hi

- **Online Media Server** NIT Calicut
  Project, DBMS Coursework Mar 2009
    - Developed an online Media Database like IMDB.COM using PHP and MySQL, making use of database concepts like Normalization

References

Available on Request