MUTHUKUMARAN PK
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EDUCATION

New York University Tandon School of Engineering, Brooklyn, New York May 2017
Master of Science in Computer Engineering, GPA: 3.9
Relevant Coursework: Software Engineering, Data center and Cloud Computing, High Speed Networks and Computer Architecture
Honors: Graduate Merit Scholarship (2015-2017)

Sri Manakula Vinayagar Engineering College, Pondicherry, India May 2015
Bachelor of Technology in Computer Science and Engineering, GPA: 3.42
Relevant Coursework: Design and Analysis of Algorithms, Data Structures, Object Oriented Programming Languages and Artificial Intelligence
Honors: Perunthalaivar Kamarajar Undergraduate Merit Scholarship (2011-2015)

TECHNICAL SKILLS

Languages: *Proficient:* Java, HTML
Familiar with: C#, Python, SQL
Tools: Microsoft Visual Studio, Mininet

EXPERIENCE

Gleaming Software, Pondicherry, India March 2014 – May 2014
Assistant Software Developer Intern

- Collaborated with a team of 4 people and developed a Java based employee database search project
- Created an algorithm which can not only search with less latency and processing power, but also can provide a precise list of suggestions if the exact match for the entry in the search field is not found in the database
- Implemented the part of suggestion module, which is used to obtain the percentage match of the entry in the search field to the entries in the database, in order to retrieve the items in the increasing order of match percentage
- Determined the latency involved with the information retrieval from the database and the accuracy of the suggestions provided by the algorithm

ACADEMIC PROJECTS

Load-balancing in Fat-Tree Data Center Networks November 2015

- Developed a Python script for SDN controller in Mininet using Least Loaded Routing algorithm to distribute the traffic evenly to all the available links in the data center
- Implemented ARP spoofing technique so that ARP reply is sent by the controller instead of the receiving host to the sender in order to reduce the round trip time and data traffic
- Added path entries determined by the above mentioned algorithm to the switching tables of all the switches at the start of each flow to make sure that the Packet-in message is not sent to the controller for each packet until next flow which prevents the controller from getting overloaded

Offline browser with context aware capabilities December 2014 – April 2015

- Developed Offline browser in .NET using C#, a browser that can work offline by downloading contents that may be needed by the user in the future while the connection is online, using a prediction engine
- Implemented context aware site prediction module which predicts the sites that the user may visit in future by analyzing the already visited sites by the user and taking into account factors such as hit count, time spent in a particular site and type of the site(dynamic content or static content)
- Implemented a Dynamic downloading module which decides the optimal bandwidth for downloading the content of a site so that there is no effect on the user's browsing experience
- Created a Content updating module using urlwatch tool which regularly checks for any update of content in the respective sites while online and replaces the old content with the new content downloaded by the Dynamic downloading module

ADDITIONAL INFORMATION

Online courses: Introduction to Physics (Udacity) and Introduction to Calculus (Coursera)
Leadership experience: Captain of College Cricket team and Student head of National Service Scheme
Language skills: Fluent in English and Tamil and Beginner in Hindi
Interests: Solving coding challenges in Code chef, Meditating and playing Chess