ANSHUL GUPTA

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ACADEMIC DETAILS

Year	Degree / Certificate	University / School	CPI / %
2019 (expected)	M. Tech (Computer Science and Engineering)	IIT Bombay	9.10 / 10
2015	B. Tech (Computer Science and Engineering)	The LNM IIT, Jaipur	7.59 / 10
2011	Class XII (CBSE)	Maheshwari Public School, Jaipur	82.00 %
2009	Class X (CBSE)	Maheshwari Public School, Jaipur	86.00 %

FIELDS OF INTEREST

Artificial Intelligence	Distributed Computing	Performance Benchmarking

SUMMER INTERNSHIPS

École Normale Supérieure de Lyon, France (INRIA)   *(May'14 - Jul'14)*
Analysis and Extrapolation of CPU Processing Rate of Simulation of Parallel Applications[1]

- Studied the behavior of combination of two tools Scalatrace and Simgrid for the off-line performance analysis of MPI applications and developed original extrapolation method to improve the accuracy of the simulated results.
- Analyzed Time Independent traces acquired on Grid'5000 of NPB Benchmarks for different problem sizes to find a pattern for extrapolation of CPU rate.

Indraprastha Institute of Information Technology, Delhi   *(May'13 - Jul'13)*
Performance analysis and Optimization of Hadoop based cluster

- Identify various parameters which affect the execution of a job on Hadoop Clusters and design a framework to execute the jobs on the given cluster.
- Configured Hadoop based cluster and optimized its performance by varying multiple configuration factors and schedulers and executed Map Reduce tasks on it to bring it to an optimal state.

MAJOR PROJECTS

Resource Provisioning of LXD Containers[2]   *(Oct'16 - Nov'16)*

- We tried to address the problem memory provisioning in containers using LXD API for containers.
- Our implementation tries to do a vertical scaling for alleviating memory hotspots. Our algorithm periodically monitors all the containers in a cluster and keeps provisioning memory to the overloaded containers in real-time.

Intelligent Reversi playing bot[3]   *(Oct'16 - Nov'16)*

- We tried to make an intelligent bot to play Reversi against a player (random or intelligent).
- The intelligence comes through Minimax search algorithm using Alpha-Beta pruning for optimization.

Performance Analysis and Optimization of Individualized CPU - GPU core systems [4]   *(Mar'13 - Apr'13)*

- Examined the CPU v/s GPU core structure and focused on how to compare the performance of both for different types of workloads and analyzed the performance.
- Compared the execution of algorithms on Intel Xeon E5630 (2.53 GHz) and NVidia Tesla C2050 (1 TFLOP) GPU analyzing their performance and speed up over time.

LNMIIT Gymkhana Workflow Management[5]   *(Mar'14 - Apr'14)*

- Automated the application workflow through various departments of LNMIIT Gymkhana using MVC model in JSP.
- Workflow management through various departments and hierarchy of command which leads to reduction in the paperwork and physical work.

Airline Scheduling Problem using Maxflow Algorithm[6]   *(Oct'13 - Nov'13)*

- Interpreted real world problem regarding Airline Scheduling solved using Maxflow Concept from the field of graph theory (Ford Fulkerson Algorithm).
- Designed an application in JAVA which gives the schedule of flights as an output for a given set of inputs of number of flights and time.

[1] https://github.com/anshulgupta0803/scalatrace-ti
[2] https://github.com/anshulgupta0803/ContainerProvisioning
[3] https://github.com/anshulgupta0803/reversi
[4] https://github.com/anshulgupta0803/Benchmarking-CPU-GPU
[5] https://github.com/anshulgupta0803/GymkhanaWorkflow
[6] https://github.com/anshulgupta0803/Maxflow-Algorithm

PUBLICATIONS

- Published "**AutoPerf: Automated Load Testing and Resource Usage Profiling of Multi-Tier Internet Applications**" in "8th ACM/SPEC International Conference on Performance Engineering (ICPE 2017)".
- Published "**Toward More Scalable Off-Line Simulations of MPI Applications**" in "World Scientific Parallel Processing Letters Volume 25 Issue 03".
- Published "**A Framework for Performance Analysis and Tuning in Hadoop Based Clusters**", in "Workshop on Smarter Planet and Big Data Analytics (SPBDA 2014)" held in conjunction with "15th ICDCN 2014, Coimbatore".

POSITIONS OF RESPONSIBILITY

Sub - Coordinator (Networking) of Computer Club (LNMIIT)   *(Aug'12 - May'13)*

- Headed a 5-strong team as a part of 3-tier system responsible for organization of classes on networking students.
- Conducted nation-wide online ethical hacking event (Prison Break) that saw a participation of 300 people.

Sub - Coordinator (Networking) of Computer Club (LNMIIT)   *(Aug'13 - May'14)*

- Organized a 3 week long winter workshop by Netcamp.

Teachers' Assistant for Operating Systems   *(Jan'14 - May'14)*

- Guided a group of 75 students in a 6-strong team.

IMPORTANT COURSES UNDERTAKEN

Artificial Intelligence	Virtualization and Cloud	Data Mining
Digital Image Processing	Linear Algebra	Database Management Systems

EXTRA CURRICULAR ACHIEVEMENTS

- 2nd in Ethical Hacking Contest of BITS-GOA.
- 2nd in Roborace Competition in The LNM IIT.
- Placed 3rd out of 40 students in Nettech Winter Camp.
- Managed entire website and levels of Ethical Hacking Event of XLRI - Jamshedpur (Unlock Your Sherlock) that saw a participation of over 600 people.