

Vivek Kumar

- a passionate engineer

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EDUCATION

Degree	Board/University	% / CGPA	Specialization	Year
M.Tech	Indian Institute of Science, Bangalore	6.2/8	Computational and Data Sciences	2013
B.E	Anna University (PSG Tech, Coimbatore)	8.29/10	ECE	2008
XII	State Board	92.83%		2004
X	State Board	94.60%		2002

WORK EXPERIENCE

Pluribus Networks	2017-present
<ul style="list-style-type: none">Worked on scalable distributed fabric upgrade framework- an one-click solution to upgrade network OS on tenths of switchesImplemented memory efficient hash table which reduced memory consumption of nvOS by 6.75X, which enabled the 4GB platforms to scale beyond 35 nodesRe-architected the status updates component in nvOS to scale on heterogeneous hardware setup using worker thread modelInvolved in 4-phase master less distributed fault tolerant consensus algorithm (ACID) Technologies used: Python, C	

Goldman Sachs	2013-17
Enterprise Scheduling Platform <ul style="list-style-type: none">Worked on Goldman Sachs's job scheduling infrastructure team, which handles ~84k hostsDesigned and implemented a scalable, highly available secure job scheduling solution for firm's internet/external facing services Technologies used: Erlang, Python, Twisted, Mnesia(distributed DB), TLS, XML-RPC	
Grid Computing Infrastructure <ul style="list-style-type: none">Grid computing infrastructure enables compute jobs to scale horizontally, a single instance can handle ~250k workersEnhanced APIs, which helped user to dynamically add/remove workers on in-house spot instancesEnhanced protocol messages between master and workers to defensively handle memory leaks on clients Technologies used: Scala, Python, Protobuf	
Cloud/Compute Platform <ul style="list-style-type: none">Performance engineering with different version of glibc, CPU vector compute technology and NUMA parametersAimed at devising crash analyzer tool based on Kernel crash dump of Linux serversCreated an automated tool for performance analyses with visualizationInvolved in Green computing effort - Kernel and BIOS parameters are tuned for saving power Technologies used: Python, Pyramid, C	

L&T	2008-11
Ideated, designed and implemented the following projects which were aimed at reducing man-hours and improving efficiency: <ul style="list-style-type: none">SEARCHWELL software – a parametric analysis tool for oil wellhead projects that automatically collects data from historic projects and estimates cost and resource requirements for new projectsTR & RMG WIZARDS – an automation tool that allows generation of bulk loop schematics and editing of multiple AutoCAD files in one shot reducing the project cycle time by 50%	

HOBBY PROJECTS <https://github.com/vivekks>

Log Traveler	2018-present
logtraveler is a simple lightweight tool to filter lines of log files based on given datetime range. I've plan to extend this to debug distributed micro services' log quickly in a centralized manner.	
Independent IT consultant – IIM Lucknow	2012-13
Involved in digitizing the operations of the student cafeteria of IIM, Lucknow which caters to thousand students and manages an annual budget of INR 40 million. The software has resulted in significant cost savings of INR 4 million annually for the student community. Features – <ul style="list-style-type: none">A central portal with independent log-in accounts for students, employees and administratorsEffective and real-time inventory management, automated billing, vendor management and payroll processingData redundancy, reliability, and permission/access control features The project required extensive work on data security, UI design and SQL databases.	

ACADEMIC PROJECTS

Load Balancing and Dynamic Parallelism for Static and Morph Graph Algorithms on GPUs

2012-13

Advisor: Dr. Sathish Vadhiyar, Associate Professor, SERC, IISc, Bangalore

M.Tech Project

- Researched on strategies for efficiently computing graph algorithms on GPUs
- Proposed a novel node splitting strategy for load balancing computations of static graph algorithms. The best case node splitting for BFS algorithm improves performance by up to 55.8% for a real world web graph

Programmable Multipurpose Robot

2007-08

Advisor: Dr. D. Sivaraj, Assistant Professor, ECE, PSG Tech, Coimbatore

BE project

Built a programmable, voice activated robot as my final year undergraduate project. Can be used as a guide for visually impaired people; can be remotely controlled to employ in hazardous locations. It won the **best project award in seven national level technical symposiums**.

SKILLS

- **Languages:** C/C++, CUDA, Python, Erlang, Scala, Javascript, Shell Script
- **Database and Messaging:** RabbitMQ, SQLite, MS SQL
- **Areas of expertise:** Distributed systems, distributed computing and performance engineering
- **Graduate research area:** Parallel programming/GPGPU

SCHOLASTIC ACHIEVEMENTS / PUBLICATIONS

- Received **Letter of Appreciation from IIM Lucknow** for digitization of their student cafeteria 2012
- Won the **L&T-Valdel ICON award** given annually to employees contributing most to innovation 2010
- Published an article in the **ATMEL international online journal** (Summer '07) on the applications of AT89C51 microcontroller in robotics 2007
- Secured school first in X standard and school second in XII standard 2004

REFERENCES

- Mr. Sanjay Agrawal, VP at Goldman Sachs, Bangalore
- Dr. Satish Maheswarappa, Chairman - Student Affairs, IIM Lucknow
- Ms. Sharmila Venugopal - Functional Head, L&T, Bangalore

VOLUNTEERING EXPERIENCE

- Oxfam 100km Trailwalker-2017
- Team captain - community team work for internet education to elders

EXTRA-CURRICULARS

Yoga, Zumba, Kung-fu (Orange Belt), NCC Cadet (B-Certificate), Badminton and Cooking