Nishant Gupta

CSE, IIT Kanpur

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Education

B. Tech, CPI - 9.4/10	May 2017
CSE, IIT Kanpur	
HSCE (+2), 93.6%	April 2013
Shivpuri Public School	
AISSCE, 9.6/10	April 2011
Tara Sadan School	

Awards and Achievements

- JEE 2013 - AIR 248 out of 0.15 Million shortlists(1.3 million total)
- Awarded Academic Excellence Award (IITK) given to top 5% students on the basis of academic performance.

Tool-Kit

Languages

Python, C/C++, Haskell, Agda, R, Bash, Javascript, Scala, Perl, x86 Assembly

Frameworks/Libraries

django, OpenCV, Parsec, data.table, dplyr, gglot, cabal, Angular, spark

Operating Systems

Linux(Gentoo, ArchLinux, NixOS, ubuntu), FreeBSD

Others

Emacs, Vim, Git, svn, ElasticSearch, LaTeX, css/scss, SQL, HTML, nix

Relevant Courses

Computer Networks, Machine Learning, Compiler Design, Functional Programming, Databases, Programming Languages, Software Architecture, Operating Systems,

Extra Curricular

- Sentiment Analysis of Social Media,   Aug'14
  Won 1st prize in Web-Dev, a webapp development competition in Takneek'14.

- Secretary,
  Programming Club   2014-2015

Professional Experience

Goldman Sachs

Intern, Bangalore   *May '16-July'16(10 weeks)*

- Job Failure analytics
  - Improvised Job Failure prediction model and automated the crucial task of structured analytics.
  - Proposed and tested root cause detection model which leverages micro and macro failure patterns to detect probable failure causes and sends recommendation to concerned teams.
- ETA and SLA Breach prediction model
  - Transformed ETA and SLA prediction model to account for more complex dependencies.
  - Fabricated and partially implemented a dynamic model which
    - Can dynamically incorporate Job failure model to alter the prediction.
    - Changes prediction dynamically in reaction to various jobs and telemetries.
    - In manual testing, exhibited twice the recall and a slight increase in precision
- Rewrote the entire data ingestion pipeline for both models which now accounts for 90 percent of jobs compared to 60 percent in earlier pipeline and with 40 percent more efficiency.

Altisource Business Solutions

Intern, Bangalore   *May '15-July'15(8 weeks)*

- Worked on the projects Actor Equivalence and Identity Stitching and Event Data Clustering for the company's consumer analytics product 'Pointlist'
- Designed an algorithm for solving the actor equivalence problem (Established a relation between actors and streaming events) for single Multiple platforms.
- Built a generic framework that takes varying Consumer data from different tenants and Processes, normalizes and Clusters it to derive meaningful inferences.

Selected Projects

[Operating Systems/IOT] Multimedia Live Chat on Tizen architecture

Samsung Research team   *Jan '16 - Apr '16*

- Designed and Implemented a Gstreamer pipeline (UDP/RTP of mpeg2ts format)
- Pipeline Recorded and muxed audio and video to make the rtp payload
- Reciever pipeline would demux and play/display real time and in-sync audio/video

[Automated Theorem-Proving] Points-to analysis in almost linear time

Prof. Subhajit Roy, Assistant Professor, IIT Kanpur   *Aug '15 - ongoing*

- Aim - To prove soundness of type system described in the paper- Points-to analysis in almost linear time by Bjarne Steensgaard via dependently typed code.
- Modeled Correspondence of 2 storage shape graphs for the type System in AGDA.
- We Made a tutorial on AGDA - *goo.gl/G2bK7q*

[Computer System Security] Analysis and fixing of Zoobar web server

Prof. Sandeep Shukla, Professor, IIT Kanpur   *Jan '16 - Apr '16*

- Analyzed the architecture of the zoobar web server (A model of OKWS web server, specialized for building fast and secure web services) for security Vulnerabilitites
- Improved security using Privilege Separation and Server-Side Sandboxing
- Used Z3(Microsoft) for symbolic execution and analysis of the web server

[Computer Graphics] Animation Video

Prof. Vinay P. Namboodari, Assistant Professor, IIT Kanpur   *Oct '15*

- Rendered 3-minute animation clip using OpenGL with audio video sync
- Implemented Keyframe animation, DeBoor's B-Spline and Texture Mapping

Other Projects

Compilers	For scala in Python
Operating Systems	Development of NachOS
Computer Architecture	Dynamic Indexing into last-level caches