AVIKALP KUMAR GUPTA *CSE, IIT Kanpur*

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EDUCATION

Examination	Year	University/Board	%Marks/CGPA
B.Tech (CSE, IIT Kanpur)	2012-2016	IIT Kanpur	7.6
12th(Sr. Secondary, AISSCE)	2012	CBSE	93%
10th (Secondary, AISSE)	2010	CBSE	9.6 / 10

SCHOLASTIC ACHIEVEMENTS

- Achieved ALL INDIA RANK **99** in IIT-JEE 2012
- Secured AIR 175 in KVPY scholarship exam (2012)
- Secured AIR 29 in ResoSTaRT'12 (81K participants)
- Received Top 1% certificate in IPhO 2011.

SUMMER INTERSHIPS

Summer Analyst, GOLDMAN SACHS **May-Jul'15**

Minimized Risk-weighted Assets (RWAs) for the company by making the allocation optimizer aware about it

- Enhanced the internal engine which recommends collateral allocation to secured funding trades to account for trade-offs between liquidity considerations (maximizing liquidity) and capital considerations (RWAs)
- Quantified the cost savings for the firm if the collateral was allocated to the trades based on the enhanced engine.

Skills Earned: Scalable programming in functional languages, Introductory knowledge in Finance

Backend Developer, Pariksha.Co (Educational Startup focused on Adaptive learning) **Apr-Jul'14**

- Project Chameleon: Thoroughly studied the development, pros and cons of the mastery-based adaptive learning model of Khan Academy and implemented an algorithm apt for the preparation for competitive examinations (Skills Earned:- CakePHP, PHP, MySQL, Git, OOPS)
- Gamification (Integration with Backend): Integrated the adaptive backend model with the Gamified user interface using AJAX and self-created APIs in CakePHP and JS (Skills Earned:- HTML+CSS, JQuery, AJAX
- Database Designing: Made architectural changes in database to extend the functionality of platform so that each user can prepare for multiple competitive exams (Skills earned: Database Architecture Proficiency)
- Sales and Product Pitching: Convinced 97 of 120 students to join the SaaS based platform

UNDER-GRADUATE PROJECT

VISUAL MOTION PLANNING OF ROBOTS IN 3D* — *Prof. Amitabha Mukherjee (CSE, IIT Kanpur)* *Aug-Nov'15*

Working on extending a project on visual motion planning of multiple robots in 2D to 3D. Motion planning is done using large scale manifold technique. V-rep software and API is used for 3D modelling and manifold generation.

ACADEMIC PROJECTS

- DEMAND PREDICTOR FOR RENTING BIKES Jan-Apr'15
  Experimented with regression and classification models in R for predicting the bike renting demand, according to the problem statement on Kaggle , in a group of 4 under Prof. Harish Karnick (CSE, IIT Kanpur).
  Implementation included: • Feature selection • 3-component mixture model • SVM • Poisson Regression • K-nearest neighbours • Random Forest • Gradient Boosted Regression and Classification Trees
- PERL TO X86 CROSS-COMPILER ON PYTHON Jan-Apr'15
  Generated an cross-compiler of Perl scripting language to x86 assembly language in Python, using Lex and Yacc tools of PLY python library, in a team of 3 (synchronized on Github) under Prof. Subhajit Roy (CSE, IIT Kanpur)
- COURSE MANAGEMENT SYSTEM Oct-Nov'14
  Developed a secure course management website for academic institutions for conducting quizzes & assignments online with automatic grade evaluation, in a team of 6 under Prof. Arnab Bhattacharya (CSE, IIT Kanpur)
- CAR SIMULATOR GAME IN C++ USING OpenGL Aug-Nov'14
  Created a car simulator in using OpenGL library in C++, under Prof. Vinay Namboodiri (CSE, IIT Kanpur).
  Implemented features include imported .3ds objects, Blinn-Phong lighting, textures, camera navigation & HUD

- DOM-JUDGE FOR ONLINE PROGRAMMING CONTEST Jan-Mar'13
  Made an online programming contest website, under ACA (Association of Computing Activities), CSE, IIT Kanpur. Added certain features to the website like making a portal for queries with the judge, enhancing the presentation of the webpage, adding a clock and to synchronize it according to user position, etc.

COMPUTER SKILLS

Programming: C, C++, Python, Git, Gnu-Plot, Octave, JavaScript (& JQuery) + AJAX, MySQL, MongoDB
Markup & Scripting: LaTeX & Beamer, PHP+HTML+CSS, Bash, Perl
Functional Languages: Oz/Mozart, Scala, SLang (GS internal)
Hardware Description Languages: MIPS & x86(assembly language), Blue Spec Verilog (BSV) machine language
Programming paradigms: Parallel Programming, Object Oriented Programming, Functional Programming

RELEVENT COURSES

Computer Science: Natural Language Processing • Machine Learning Techniques • Algorithmic Game Theory • Principles of Programming Languages • Compiler Design • Theory of Computation • Principles of Database Systems • Operating Systems • Computer Organisation • Computer Graphics
Mathematics: Probability and Statistics • Logic in Computer Science • Modal Logic
Humanities & Social Sciences: Introduction to Psychology • Psychology of Organization • Human Rights
Foreign Languages: German Level-I

POSITIONS OF RESPONSIBILITY

- **Techkriti'15:** Coordinator, Software Corner. Had complete responsibility of the event Chaos (esoteric language coding competition), which was conducted smoothly on March 13, 2015:
  1. Designed problem statements apt according to the difficulty level of the esoteric language and the time-limit
  2. Decided test cases which test the correctness and robustness of the solution

  Participants appreciated the contest and the winners were given cash prizes worth ₹ 30,000
- **Summer Sports camp'13:** Captain, Football team. As the leader of 15 players in the football camp:
  1. Coordinated with the Games & Sports Council and other sports teams, for facilities & equipment
  2. Assisted Football coach in improvement of trainee performance by off-field motivation and in-match guidance

EXTRA-CURRICULAR ACHIEVEMENTS

Group Dance:
- Mood Indigo'13: Meet the street−Semi-finalist Kahani thodi filmy hai−Finalists
- Antaragni'13: Tour-de-Force−2nd-position Jitterbug−3rd-position
- Mood Indigo'12: Picture abhi baki hai−Finalists
- Antaragni'12: Tour-de-force−3rd position

Football:
- Udghosh'13: Football−Silver-medallist team • Sportech'13 (IIT Delhi): Football−2nd position

Karate, Shodan Ho: Black-belt