Rakshit Gautam
Graduate
Computer Science and Engineering
Indian Institute of Technology, Delhi

Male
DOB - 13th Sept. 1993
+91 9958639529
raks.gautam@gmail.com

Examination	University	Institute	Year	CGPA/%
Graduation	IIT Delhi	IIT Delhi	2015	7.36
Intermediate/+2	CBSE	Modern Senior Secondary School, Kota, Rajasthan	2011	86.8
Matriculation	CBSE	Modern Senior Secondary School, Kota, Rajasthan	2009	92.8

SCHOLASTIC ACHIEVEMENTS

- Secured an **All India Rank** of **115** in IIT-JEE 2011 among 0.5 million aspirants

- Secured an **All India Rank** of **1084** in AIEEE 2011 among 1.1 million aspirants

- Awarded **Summer Research Fellowship** from L3S Research Center, Hannover, Germany (Summer 2013)

INTERNSHIPS

Power Test Automation and Analysis
Samsung R&D Institute India, Noida *Summer 2014*
· Used Monkey Runner and Android View Client to automate standard power tests used for mobile testing. Built an android application (*Sysresource*) that could take logs of parameters like CPU, GPU, DDR frequencies, battery temperature, thermistor temperature, LCD brightness at adjustable frequency. A floating widget was used to display these parameter values. Also created a python application to generate plots of these parameters.

ACM Recsys Challenge: 2013 (*Yelp Business Rating Prediction*) Dr. Ernesto Diaz-Aviles
L3S Research Center, Hannover, Germany *Summer 2014*
· Built models to predict rating that a user would assign to a business. Applied Collaborative filtering techniques like Regularized SVD, Biased Matrix factorization, K-Means Clustering, Linear model for the Items, KNN techniques using cosine and hashing similarities. Ensembled the independent models to achieve an improvement of 3% RMSE over the baseline.

RESEARCH PROJECTS

Bachelor's Thesis: Facial Expression Recognition (Prof. K. K. Biswas)
Department of Computer Science and Engineering, IIT Delhi *Spring 2015*
Extracted face images from Cohn Kanade and FEED datasets. Tried weber normalization and geometric normalization before feature extraction from face images. Extracted Local Binary Pattern features, Local Directional Pattern features, Local Binary Patterns in three orthogonal planes, Local Directional Patterns in three orthogonal planes, geometric displacement features from static images/image sequences. Used classifiers like SVM with kernels, Naive Bayes, Nearest Neighbour for classification.

Functional Connectivity Toolbar for AFNI (Prof. Rahul Garg)

Department of Computer Science and Engineering, IIT Delhi *Spring 2015*

Created a toolbar for computing functional connectivity for an open source software AFNI (Analysis of Functional NeuroImages).User could choose a region of interest, method to generate representative time series for ROI and the correlation method. Artifacts could be regressed out from the fMRI data.

KEY COURSE PROJECTS

- *Comparative Study of Classifiers* (Fall 2014) Implemented and compared performance of SVMs, Neural Networks, K-means and decision trees; empirically analyzed discriminative vs. generative classification

- *BlackJack* (Spring 2014) Modelled the game if BlackJack as a Markov Decision Process

- *AI-based Solver for Connect-K game* (Spring 2014) Built a C++ player for a generalization of the Connect Four game on any board size using novel heuristics in Minimax and Monte Carlo algorithms

- *PintOS, Instructional Operating System* (Spring 2014) Implemented argument passing and system calls in User Programs; Buffer cache, subdirectories and extensible files in a file-system on a skeletal C code

- *Music Website* (Spring 2013)

    - Designed a music website with a dynamic backend created using Postgresql

    - User could choose items based on likes, favourites, recommendations, albums, genre, artists, moods and create customised playlists

    - Recommendations and top trends were also shown

- *FIFO Buffer* (Spring 2013) Implemented a FIFO buffer on the FPGA board that was used at the transmitting and receiving ends of a UART

- *Interpreter and Compiler for Functional Languages* (Spring 2013) Built a Prolog interpreter (along with lexer and parser) in OCaml; implemented an abstract compiler for a toy functional language in Prolog

- *Data Visualization and Analysis* (Fall 2012)

    - Indian Lok Sabha Analysis - Analysed the data of Indian MP's based on the features

    - Social Network Analysis - Analysed a hypothetical social media database. Made an interactive dashboard showing the data flows and clusters through mashups. Hypothesis tests were conducted

- *Processor Simulation* (Fall 2012) Designed a 5 stage inorder pipeline, tournament branch predictor and 3 level cache for processing the instructions

TECHNICAL SKILLS

C, C++, Python (with Numpy, SciPy, PyQt, MonkeyRunner, AndroidViewClient toolkit), Java (with Prefuse, D3, Twitter4j, ADT toolkit), ARM ISA-32, Javascript, JQuery, PHP, Ajax, VHDL, Latex

EXTRA CURRICULAR ACTIVITIES

- Dramatics : Performed as a part of Inter Hostel Street Play team
- Cricket : Part of Inter Hostel Cricket Team