Pranav Raj

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Education

B.Tech Honours in Computer Science and Engineering

Indraprastha Institute of Information Technology,Delhi (IIIT-Delhi)
CGPA: 8.4
Completion Date : December 2013

All-India Senior Secondary Certificate Examination

St. Gregorios School
Score: 87.6%
Completion Date : 2009

Work Experience

Research Assistant (January 2014 - Present)

- Currently working as a Research Assistant at IIIT Delhi under Dr. Astrid Keihn.
- Extending the work on '*Checkpointing for mobile environment*' done as a part of Undergraduate Research.

Teaching Assistant (January - May 2014)

- Currently a Teaching Assistant for the *Theory of Computation* course.

Microsoft India Development Center, Bangalore (July - December 2012)

- Worked as a research intern in Bing Ads Sciences team.
- Worked on developing *scalable* linear support vector machines for ad click prediction

IIIT Delhi OPUS (May - July 2011)

- Worked on developing Open Placement University Software for IIIT Delhi.
- The software was developed using open source technologies and was used by IIIT Delhi for managing placements.

Publications

Astrid Kiehn, Pranav Raj, Pushpendra Singh, A Causal Checkpointing Algorithm for Mobile Computing Environment, 15^{th} *International Conference on Distributed Computing and Networks (ICDCN), 2014.*

Selected Projects

Combinatorial Game Theory

Doing B.Tech project on Combinatorial Game Theory under Dr. Debajyoti Bera. One of the games we are more concentrated on is Conway's game of life. We developed a new variant of it and are trying to prove some interesting properties of this variant.

Causal Checkpointing for Mobile Computing Systems

Mobile computing systems have features like high mobility, frequent disconnections, and lack of resources. These make such systems more prone to faults. Checkpointing is one of the ways to confine faults and restart the application faster. A solution was presented which not only takes takes care of the above mentioned difficulties but also reduces the number of communication messages and gets rid of the need to know about all the existing mobile processes at a given time.

CollabEdit

A peer to peer based real time collaborative editing tool for eclipse users which helps multiple users to work on same project in real time.Most of the collaborative systems have a server involved in between somewhere, we remove that barrier and hence improve both privacy and productivity.

Automata Plus

A Theory of Computation (TOC) tool written purely in python to check and experiment with TOC concepts. It has functionalities which allows users to work with both deterministic and non deterministic automata, regular expressions, turing machines etc. It was selected for IIIT Delhi Research Showcase 2011.

SocNetShop

The buying patterns of users depends a lot on the buying patterns of their friends and family. SocNetShop tries to exploit this feature by suggesting products based on the relationship graph deduced from the rich facebook and twitter data of the user. Server is written in python and is running on Google App Engine. (Web: http://www.socnetshop.appspot.com/).

Drive n' Ride

An android application that helps users from same organization to pool a car. Developed as a part of Software Engineering Project. The server is running on Google App Engine and uses Google Maps API and personal preferences to recommend the co-passengers.

Twapper

Both company's and product's growth will depend on how people perceive it. We try to relate the growth (or decline) of a product using data from twitter. Past archived data was collected from sites like twapperkeeper and machine learning tools were used to relate these tweets with the growth or decline of the product.

Skills

Languages

Python, C/C++, C#, Java, Promela, Prolog

Interest Areas

Primary interests are Formal Verification, Combinatorial Game Theory, Algorithms and Automata Theory. Other interests include social network analysis, distributed computing and developing cloud applications. Is a diehard programmer

Tools and Technologies

Google App Engine, Microsoft Azure,Microsoft Visual Studio, ECLIPSE, Office, GIMP, Octave, MySQL, SPIN

Selected Technical Electives

Graph Theory, Algorithm for Discrete Optimization, Compilers, P vs NP, Distributed Systems, Intelligent Systems, Verification of Reactive Systems, Mobile Computing, Randomized Algorithm, Logics for Computer Science, Data Mining, Secure Coding, Software Engineering, Algorithm Design and Analysis, Databases and SQL, Digital Communications, Operating Systems, Probability and Statistics, Theory of Computing, Discrete mathematics.

Other Accomplishments

- Specialization in *Theory* and *Security and Privacy* stream.
- Winner of Windows 8 Hackathon competition held @IIIT Delhi.
- Has been an active member of NGO Child Relief and You (CRY).