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EDUCATION

B.Tech	Information Technology. Government College of Technology, Coimbatore. <i>CGPA:7.99/10. First class with Distinction.</i>	2006–2010
HSC	Tamil Nadu State Board. Sakthi Vinayakar Hindu Vidyalaya, Tuticorin. <i>Score: 1091/1200. (90.91%) Third rank in school.</i>	2006
AISSE	Central Board of Secondary Examinations. Sakthi Vinayakar Hindu Vidyalaya, Tuticorin. <i>Score: 422/500. (84.4%)</i>	2004

AWARDS/HONOUR

- * **First prize in Insideview Hackaton.** Aug–2012
Learnt & built a *Company Recommendation Engine* using *N-Nearest Neighbour* algorithm. Won first prize out of 25+ teams.
- * **First prize in Project Presentation at Srishti 09, PSG Tech.** Feb–2009
Awarded first prize for *Real-time Desktop search application for linux*. Srishti is an annual symposium conducted by the IEEE students' chapter of PSG Tech, Coimbatore. It attracts more than 3000 participants from all over India.
- * **Second prize in Project Presentation at Soft Sem Quiz.** Dec–2007
Awarded second prize for completing *SMS Simulator app with T9 dictionary* and *Parser* for generating algebraic expression from given Infix and Postfix/prefix expressions. Soft Sem Quiz is the annual intra college technical event.
- * **First prize in district level Mathematics olympiad.** Oct–2005
Mathematics quiz on *Calculus, Geometry, Trigonometry and on other Higher Secondary syllabus*. A total of 22 teams from Tuticorin District participated in the event.

UNDERGRADUATE PROJECT

Guide Dr. K. Baskaran, M.E. Ph.D.

Title An efficient key management protocol with robust continuity for wireless sensor networks.

Wireless Sensor Networks (WSN) are vulnerable to various types of attacks. A big issue in security schemes is the key management mechanism responsible for distributing secret keys. The wireless sensor networks use pairwise key management protocols. The traditional pairwise key management protocols use limited and fixed pool size for storing the keys. If nodes are compromised, the keys must be regenerated every time. The existing security schemes for WSNs use Blom's key approach for key management which results in higher time complexity and fixed pool size.

A modified version of the Blom's scheme for efficient key management in wireless sensor networks is proposed in this project. This scheme provides more security by using a hashing-like algorithm along with modified Blom's key approach for securing the secret key information with scalable key pool size.

NOTEWORTHY PROJECTS

Gre Wordcards

- Android application for helping my GRE Vocabulary preparation.
- Github Url: <https://github.com/rajegannathan/custom-vocab-flashcards.git>
- It uses *Wordnik Words API* to fetch Meaning, Usage, Etymology and Derivatives of any given word.
- Opens up in full screen to avoid any distraction from other notifications. Uses big & bold font for helping the student read easily.
- Uses double tap & swipe gestures to go between words and is optimized for single hand usage (which is my majority use case).
- Uses background threads for fetching the details from API and caches around 250 latest words added.

Information Extraction Engine

- The engine used to extract name, place and price of ads in flcircle.com.
- Normalizes all the words and compares it with dictionary of places to extract place information.
- Standardizes all numerical values and checks the context for occurrence of *Rupees* or its variants to extract price information.
- Uses a dictionary of product names and its features to extract product information.

Company Recommendation System

- Recommends companies to Salespersons based on his previous target companies.
- Recommendation engine built using User-User similarity.
- Uses a feature vector of 12 dimension to represent a company.
- Percentage of page views of a company by a person determines his past behaviour.

infoquestgct.com

- The official website of Infoquest 2010.
- Infoquest is a National level technical symposium conducted by Computer Science & Information Technology Association of Government College of Technology, Coimbatore.
- Designed & Developed *User authentication, Custom Captcha, Virtual Stock Market, Online quiz and Online Programming* modules in PHP.
- Responsible for the whole backend design & development.

Online Judge

- A judge similar to SPOJ.
- The judge was used for compiling programming solutions submitted for the Online Programming contest of Infoquest 2010.
- Supported solutions in five languages. Perl, Java, C, C++, Ruby.
- Supported facility to set *Memory, Process, File, and CPU-time* limits per question.
- Designed as three separate process which communicates using *Unix Pipes*. First module polls and downloads submitted programs. Second module compiles the program with given run time limits and checks the output for correctness. Third module uploads the result back to remote server for display in web interface.

Desktop Search

- A realtime desktop search application for Fedora Linux developed entirely in C++.
- The GUI was built with *GTK toolkit*.
- The applicaiton indexes the whole file system as a *n-ary tree*.

- It uses linux *watch descriptors* to watch on any filesystem changes and updates the index.
- The application could match search terms which match more than *200,000* entries in 2 seconds. The index contained a total of 1 Million entries.

SMS Simulator

- The application mimics mobile networks by having a centralized server and a number of clients that communicate messages through the server using TCP.
- Has a mobile like Tactile keyboard for input. Supports auto-complete similar to T9 mobile keyboards. Words can be added/removed to the dictionary.
- The dictionary is implemented using *Trie* datastructure.
- Uses AWT for the UI and Java for the server side programming.

Apart from the above mentioned projects, I have done a number of other projects which includes inventory management in Visual Basic and Access, Snake game in Turbo C, library management in perl and angularjs directives & filters.

WORK EXPERIENCE

CONSULTANT, CANVERA TECHNOLOGIES

JAN 2014 TO PRESENT

- Setup the application architecture & development process. Mentored the development team.
- Built high performance lightbox/slideshow with dynamic image scaling, load more & thumbstrips.
- Built a rails like asset pipeline using Grunt and made the application production ready.
- Performance Optimizations — Load time: From ~10 sec to 1 sec. Asset size: From ~1Mb to ~600Kb.

FREELANCER

NOV 2013 TO PRESENT

- Built Urblotter (app.urblotter.com) a betting website for FIFA 2014. (ROR, Angularjs, Sidekiq).
- Built a wikipedia parser and admin app for Today in History iphone app. (ROR, Nokogiri, Redis, Angularjs, Sidekiq, Mysql) — github.com/rajegannathan/wikipedia-scrapper
- Built Gre—flashcards: My GRE preparation android app using Wordnik API.

FOUNDING MEMBER, F1CIRCLE.COM

JAN 2013 TO OCT 2013

- Built the complete application from scratch. (ROR, Angularjs, Memcached, Redis, Sidekiq, Mysql)
- Built Information extraction engine. It extracts name, place, & price info from user's posts.
- Played a major role in User acquisition, marketing and sales in addition to engineering.

SOFTWARE ENGINEER, INSIDEVIEW INC

OCT 2011 TO MAY 2013

- Developed an award winning Company recommendation engine in Insideview Hackaton 2012. Built a Geo-spatial search application in the second hackaton.
- Developed in-product notification framework using Drools framework & Lucene indexes.
- Developed the Activitystream security framework using AWS Simpledb and using custom eventbus.
- Owned up Insideview's connections features and did a number of performance optimizations.

SOFTWARE ENGINEER, UNITED ONLINE INC.

JUL 2010 TO SEP 2011

I worked on United Online's billing systems which dealt with financial data. As onboarding project, I built a RPC framework which was later used with Bogo filter for spam detection in Netzero emails.

TEACHING EXPERIENCE

- As a Placement Representative, I have conducted numerous Technical and Soft-skills sessions in my Undergraduate class.
- Technical topics covered: *C, C++, Data Structures, Operating Systems, Compiler Design and DBMS.*

EXTERNAL LINKS

Website <https://rajegannathan.in>

Github <https://github.com/rajegannathan>

Odesk <https://odesk.com/users/~01d50700accaa363ea>

Linkedin <https://www.linkedin.com/in/rajegannathan>

Twitter <https://twitter.com/rajegannathan>

REFERENCES

References can be provided on request.