GOKULNATH AMBIGAPATHY

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EDUCATION

University at Albany, State University of New York	Master in Computer Science	3.3 | Dec 2018
University of Texas, Arlington	Master in Computer Science	3.7 | May 2015
Anna University, Chennai, India	Bachelor in Computer Science & Engineering	3.50 | Jun 2012

TECHNICAL COMPETENCIES

Programming Languages: C, C++, JAVA, JavaScript, Python
Web Tech. & Services: HTML5, JSP, XML, AngularJS, JQuery, JSTL, CSS
Frameworks & Technologies: MVC Framework, Tomcat, IIS, TomEE, Maven, Apache Solr
Operating Systems: Windows, Linux, Mac OS
Database: MySQL, MS SQL, PostgreSQL
IDEs: Visual Studio, Eclipse
Certifications: SCRUM Team Member Certified

EMPLOYMENT

Adjunct Instructor — **University at Albany, SUNY** — Jan – Dec 2016

- handled CSI 503 – Data Structures and Algorithms (**Fall 2016**). It was really challenging to teach the graduate students. I covered a vast range of topics including NP Completeness and Graph Algorithms in depth(upon request) since I had a couple of students doing their Doctoral research in Data Mining and Anomalous Pattern Detection.
- handled CSI 403 – Data Structures and Algorithms (**Spring 2016**). Topics include Complexity theory, Graph Algorithms, Sorting Algorithms and other few Greedy Algorithms. Students were amazed when they learned a few algorithms involving the Google Maps. Apart from this, during my office hours I always took the initiative to make students understand the importance of complexities while designing an algorithm and implementing it in any programming language.

Software Developer — **Ithos Global** — Sep 2018 – Dec 2018

Data Migration from Sql to Mql Database Had to migrate a few million data from Sql to Mql (Matrix Query Language) Database. The work involved writing three different views in order to fetch 3 different data (viz History, Specifications and Formula Attachments) and also to generate MQL scripts. The Mql scripts were responsible for the data load into the Mql Database.

Dynamic Import Template Had to create a few workflows based on the input from an excel sheet. Had to write servlets order to build the ExcelUtils and also to fetch the data and populate it according in the front end. No matter what fields are being added in the excel sheet, it will dynamically get uploaded into the database. Handling the multi select values were quite challenging.

Performance Enhancement Task There was a scenario when the amount of data exceeded a certain limit, the home page of the company's website was at stake. It took 45 seconds for the site to load. Around 80,000 documents were fetched altogether from a left join that involved 3 tables of size 50,000 each. Proved the 45 second delay in theory and found out the problems in indexing. Still working on indexing the database. But I will be trying a newer approach as well through Paginating the data! (fetching the prompted records in real time)

History Tracker for a Formula and its composition This involves tracking the history of two separate tables which had only one field in common to each other. Creating a separate table for tracking the history wasn't a problem but the challenge was to write a trigger whenever either table changes, we have to track their history with the respective version numbers. Since there are no sufficient number of common fields between the two, the trigger was written in such a way that counts the number of versions in each table and copies the respective history by incrementing its revision. This may seem to be a tricky way to track a history but there was no other solution found in order to maintain the reliability with the version numbers. The UI part was a little bit tricky as well which involved a side by side comparison of the version based history.

Download Attributes History into an Excel This involved writing some ExcelUtils and also writing a separate view in order to populate the necessary history information based on the requirements specification document. This involved populating data from 4 different tables into two different tabs (restricting the data based on the constraints built on the header information)

SMART FORMULATOR (RESTful API) One of our clients was using our WebService in order to create/update formulas/products into our Information Network. Since we have to make sure that minimal work is being involved at the client side, we had to incorporate all of the put/post get logic into one single create function. The creation/updating involved 2 different json formats and the challenge was to successfully process the *invalid json format. I had to rewrite most of the service classes to finishing this task. This paved a way to learn a little bit more about the RESTful APIs.

Download ProductTracker with Metrics One of the projects involved downloading the data from a product tracker dashboard and populate the available data into an excel of any given format. The challenge was to populate the data according to the specified metrics. The report should be reliable in such a way that the data can be retrieved and a report is created based on a Quarterly basis, or a product with similar regulatory restrictions and so on. The main difficulty was to fetch various nodes along with their respective earliest due dates.

Research Assistant **University at Albany, SUNY** Aug 2015 – Dec 2018

- I am currently working on Homomorphic Encryption Techniques. The current research is on developing new schemes to perform arbitrary operations on the encrypted data on the secure cloud server. I am mainly focusing on an intelligent sorting technique where we can sort the encrypted data using non comparison based sorting algorithms.
- I'm also working Unification on Modulo Elgamal Crypto System to identify various attacks that could be done on these systems. Developing the unification algorithm to verify the equations of the crypto systems. These equations help to address various possible attacks that could be made on Elgamal Crypto Systems.

Teaching Assistant **University at Albany, SUNY** Aug 2015 – Dec 2018

Organized the lab sessions and also managed discussion sessions for the following courses.

CSI201 - Computer Algorithm and their representation
CSI205 – Object Oriented Programming for Data Processing Applications
CSI210 – Discrete Structures
CSI519 – Advanced Programming Concepts
CSI538 – Computational Logic
CSI503 – DataStructures and Algorithms

System Admin Intern **University at Albany, SUNY** Jun 2016 – Sep 2016

- Manage configuration and operation of client-based operating systems.
- Firewall configuration and also monitor the network for various malware attacks.
- Assisted the senior system admin to design a virtual lab in order to process the data collected in order to predict the changes in the weather.

Senior Systems Executive **Cognizant Technology Solutions** Dec 2012 - May 2014

- Trained in CCNA, CEH, Network Security, Maven, SharePoint, Mainframe
- Monitored Windows server systems, application logs and troubleshoot problems whenever necessary
- Implemented and maintained LANs, WANs, including VLANs
- Monitored network traffic and network logs for the purpose of detecting abnormalities and implementing corrective and preventive measures, including network monitoring tools

ACADEMIC PROJECTS

Blog Management System This is a web app built in order to manage blogs. We had to deal with three different users. The blogger who creates, edits, deletes the blog. The reader who searches for various blogs using keywords/hashtags can also add those blogs to his/her favorites and also can comment/report on the blog. The admin who can view the list of users/blogs and can delete the reported users/blogs from the system. The entire webapp was written in Sprint Boot.

NBA OnTheGo This is a web app build in Spring Boot. We also had to request for the non-commercial api access key from mysportsfeed.com in order to update the users with most recent and upto date information regarding the fixtures, results, team stats, player stats and also give the users freedom to pick their favorite teams and view their stats upon a single click on their home page. The main challenge was the web service integration since we didn't have much of the hands-on experience with the RESTful API web services. The project involved two users 1. The admin who can view the users and remove/block them based on the reports 2. The customer audience who are interested/follow the NBA league.

UAlbany Food Court Website This site involved creating a portal for both the students as well as the food vendors. The students can order food and pick it up at any intended time. The food vendors were given sufficient freedom to modify the prices, add daily specials. We are now working on connecting the podium to our University's site so that students can purchase food even with their ID cards.

Completely Fair Scheduler(CFS) using Red Black Trees(RBT) Tried to implement a Kernel of our own. Process execution was done based on a time constraint. Since the fairness has to be maintained in the CFS, RBTs are used.

Created a site to collect relief funds (for the Chennai Floods) This project involved creating a small portal for all the people who came forward to donate funds for the people affected during the Chennai floods. This also generated an automatic thank you mail after their donation.

Enterprise Development Software using MongoDB An API was designed which accepts a query for a specific drug and provides all the related details that are being stored in the MongoDB. The parsing of the files given as inputs are programmed in Python.

Object Identification using Open CV in Android Objects were identified in the server using the Haar's Algorithm and dealt in speech in the client using Text to Speech Synthesizer. Each object was assigned unique identifiers in a 3-d manner which made the algorithm to distinguish from objects. Project's platform was Android.

Web Server using Beagle Board 7.62 cm × 7.62 cm × 1.6 cm board was made to act like a web server which handled requests from almost 10 Clients. The MicroSD port helped us to import Ubuntu into the board.