Sai Akhil Teja
akhiltejamekala@gmail.com

Education

Indian Institute of Technology Guwahati, India
Bachelor of Technology - Computer Science and Engineering; CGPA: 7.20 *June 2013 - May 2017*
Courses: *Data Structures and Algorithms*, Software Engineering*, Operating Systems*, Data Communications**, Networks*, Compilers*, Artificial Intelligence*, Information Retrieval*, Computer Vision*, Intelligent Systems and Interfaces**

Experience

Electronics for Imaging, Pvt Ltd Bengaluru
Software Engineer *May 2020 - Present*

- Implemented a multi-interface EFI product installation application using C# and .NET framework.
- Currently upgrading the underlying IPP(Internet Print Protocol) used by EFI printing products from v1.0 to v2.0 and the developed products shall be Mopria certified.

Samsung Research Institute(SRI) Bengaluru
Senior Software Engineer *March 2019 - May 2020*

- Efficiently designed and developed the EES node in 5G Edge Computing.
- Efficiently designed and developed a utility package that semantically validated the inter-service communication messages(against 3GPP 5G OpenAPI specifications) used by cloud-native 5G Core Network Functions in C++.
- Designed and developed an agnostic to the platform, resilient and stateless cloud-native 5G Core Network that can be deployed in a CaaS(container as a service) environment using C/C++, Kubernetes, Redis Db, gRPC.
- Designed a novel semi-supervised learning algorithm that optimizes paging signaling overhead using a dynamic Tracking Area List configuration in 4G LTE.

Samsung Research Institute(SRI) Bengaluru
Software Development Engineer *June 2017 - March 2019*

- Developed a discrete event network simulator that evaluated the behavior and performance of the cloud-native 5G Core Network Functions.
- The simulator supported topological design, model development, node and link configuration, and performance analysis to create complex network scenarios with multiple network nodes using nghttp2, Java, and C++.
- Designed and developed numerous features in virtualized SAEGW (3GPP defined LTE Network node).
- Efficiently supported existing virtualized SAEGW functionalities through various bug fixes and issue analysis.

Samsung Research Institute(SRI) Noida
Software Development Intern *May 2016 - July 2016*

- Implemented a desktop version of an intelligent dialer application that suggests the top five contacts whom the user was most likely to call next based on call log data, contacts, messages, and calendar information.
- Developed a novel learning algorithm using random forests in Python using Numpy and Scipy packages.

Projects

Evaluation of QOE metrics for DASH using Trace Driven Emulation Test Bed Spring 2017
Dr. T Venkatesh, Associate Professor *IIT Guwahati*

- Formulated and developed a QoE Monitoring and Measurement system for DASH using a real-time trace-driven emulation testbed and a real-time QoE metrics capturing technique using Javascript and Python.
- Created a scalable, reliable, and hardware-agnostic emulation testbed using Linux TC that can replicate a wide range of network conditions using real-time bandwidth traces.
- Emulation testbed is a client-server model with the client running DASH player and the HTTP server hosting Big Buck Bunny 10 sec video dataset.
- Real-time QoE metrics are captured at the client by tweaking the client player code and emulated the wide range of network conditions using HSDPA-bandwidth logs for bus, tram, and ferry.
- Evaluated noteworthy objective QoE metrics for rate adaptation algorithms like Buffer Based (BB), OSMF, and Segment Aware Rate Adaptation (SARA) using the real-time trace-driven emulation testbed.
- Analyzed the QoE metrics for a shared bottleneck scenario with three clients each running a different algorithm.

Customized Book Search Engine Fall 2016
Dr. Sanasam Ranbir Singh, Assistant Professor *IIT Guwahati*

- Built a clean web-based book search engine that suggested a corrected query if required and sorted book results based on relevancy determined through term similarity using TF-IDF as the weighting measure.
- Optimized the results by implementing query expansion, concept based topic retrieval and document filtering.

- Implemented an SVM classifier trained on query independent training data that classifies the book reviews into positive and negative reviews
- Enhanced the user experience by categorically displaying the positive and negative reviews for each book result using an attractive UI. Implemented using Whoosh, Flask, Bootstrap, and Amazon books dataset.

Survey Paper on Temporal Databases Spring 2016
Dr.Amit Awekar, Assistant Professor *IIT Guwahati*

- Introduced different concepts of time like User-Defined Time, Valid Time, and Transaction time.
- Discussed challenges involved in data modeling, designing, and implementation of temporal databases and detailed various temporal database models like Static Database, Static Rollback Database, Historical database, and Bi-temporal database along with their strengths and drawbacks using examples.
- Discussed conceptual design; BCNF and the Third Normal form as part of the logical design; Two-Level Storage Structure, Two-dimensional array, Multi-dimensional file partitioning as part of the physical design of temporal databases.
- From an implementation aspect, delved deep into Integrated and Layered approach and the implementations of Query Processing, Algebraic Operator implementation, and Indexing in temporal databases.

Driving Assistance for a Mobile Robot Fall 2015
Dr. Shivashankar B Nair, Professor *IIT Guwahati*

- Developed a front view and rear view radar system to detect, display and warn the driver of an obstacle using two ultrasonic sensors, mounted on the servos motor that rotated from 30° to 150°.
- Enhanced the assistance for front view by displaying the distance and angle of the obstacle on LCD screen using three ultrasonic sensors fitted at the front.
- Provided a lane change warning system that detected and warned the driver on a LCD screen in case of an unintentional lane change using four Infrared sensors(one for each wheel) and Arduino.
- Implemented a smart headlight that dipped and adjusted the brightness if an oncoming vehicle is detected using LDR.

IITG Hospital Management System Spring 2015
Dr. Pradip K Das, Professor *IIT Guwahati*

- Developed an interactive web interface for IITG Hospital Management system using Django, SQLite and Ajax.
- Implemented all the requirements of a general hospital and provided easy and effective storage of information related to patients and their test reports.
- Supported an autocomplete enabled querying based on patient name or medicine details or test reports.

Honors and Awards

- Awarded *EVP Business* for contributions in Stabilizing and Commercializing LTE - vGW for Jio Mar, 2019
- Awarded *Samsung Software professional* medal for clearing an international Professional Level Coding Test Feb, 2019
- Awarded *Samsung SPOT* for the creative approach toward handling the Memory leak Issue in SAEGW Aug, 2018
- Received the MHRD *Central Sector Scheme of Scholarships for College and University students* Oct, 2013
- Secured the 1st rank in the Andhra Pradesh State in K.W.E.S.T state level talent exam May, 2010

Volunteer Experience

- Volunteered in various NGO activities across Bengaluru, especially Landmark forum[1], We are your Voice[2]
- Active member of Bengaluru City Football(soccer) Club and second prize winner of SRIB Network football cup(2009)
- Actively participated in coding contests and problem discussion sessions within SRI, Bengaluru
- Volunteered in *SAATHI*: Peer Mentorship program as a Mentor and an active member of NSS in IIT Guwahati.
- Enthusiastic participant in hackathons, workshops and coding contests organized by Coding Club, IIT Guwahati

* - Theoretical Course and Practical Lab ** - Theoretical Course alone

[1] https://www.landmarkworldwide.com/
[2] https://weareyourvoice.org/web/site/about