Sai Akhil Teja

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Education

University of Colorado, Boulder Boulder, USA
Master of Science - Computer Science *Aug 2021 - May 2023*
Courses: *Data Centre Scale Computing, Machine Learning*

Indian Institute of Technology Guwahati, India
Bachelor of Technology - Computer Science and Engineering *June 2013 - May 2017*
Courses: *Artificial Intelligence*, Information Retrieval*, Intelligent Systems and Interfaces**

Experience

Electronics for Imaging, Pvt Ltd - Senior Software Engineer May 2020 - July 2021
Tools Used: C# .NET, C++, Mopria Certification

- Enhanced EFI product installation tool by implementing Cloud, Network and multi-USB installation methods
- Achieved Mopria Certification by implementing Cloud, NFC tap-to-print, and wireless printing capabilities for EFI Print Ecosystem, thereby enabling unparalleled interoperability between brands.

Samsung Research Institute (SRI) - Senior/Software Engineer June 2017 - May 2020
Tools Used: C/C++, Kubernetes, RedisDb, Docker, 3GPP OpenAPI specifications, nghtpp2

- Developed a POC model for 5G Mobile Edge Computing Network. Worked on the Samsung EES node.
- Semantically validated the cloud-native 5G CNF[1] inter-service communication messages against 3GPP 5G OpenAPI specifications by developing a utility package that performed better than LibYAML and Swagger.
- Tested the behavior and performance of the cloud-native 5G CNF[2] by programming a discrete event network simulator.
- Contributed to the development of platform-agnostic, stateless, CaaS[3] deployable cloud-native 5G Core Network.
- Programmed numerous features in virtualized SAEGW (3GPP defined LTE Network node).
- Analyzed and fixed multiple issues and bugs in virtualized SAEGW[4].
- 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) - Software Development Intern May 2016 - July 2016
Tools Used: Python, numpy, Scipy, Random Forest

- Implemented a desktop version of an intelligent dialer application based on call log data, contacts, messages, and calendar information by developing a novel learning algorithm.

Relevant 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.

[1] Core Network Functions
[2] AMF and SMF
[3] container as a service
[4] Samsung SGW

- 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.

Skills

- **Software:** C++, C#, C, Python, Java,