BHARATH NARAYANAN SHANKAR

Gainesville, FL | bharathshankar@ufl.edu | https://github.com/bharathaiys | https://dribbble.com/bharath_n |+1 3522849814

EDUCATION

University of Florida **August 2019-Present**
Master of Science, Computer Science. GPA : 3.66/4
Courses taken: Analysis of Algorithms, Computer Networks, Advanced Data Structures, Software Testing, Distributed Operating Systems, Distributed Multimedia Systems.

SRM Institute of Science and Technology, Chennai, India **May 2019**
Bachelor of Technology, Computer Science with Distinction securing **86.03%.**
Relevant coursework: Software Engineering Principles, Natural Language Processing, Web Programming, DBMS, Programming in Java, C++, Python, Game Programming, Data Mining.

TECHNICAL SKILLS

- **Programming languages:** C/C++, Java, Python, MySQL, R, PL/SQL, F#, C#, Git, JSON, Akka.NET.
- **Web Technologies:** Angular, HTML5, JavaScript, Node.js, CSS3, PHP, Google Dialog-Flow, XML, Java Servlets.
- **Design/Simulation Software:** Sketch, Adobe XD, Photoshop, After Effects, Illustrator, Principle, Android Studio.

PROJECTS

TWITTER CLONE/SIMULATOR – *F#, AKKA.net, WebSharper, JSON, HTML, CSS*

- Simulated a client/server **distributed system** with multiple actors that supports registering accounts, subscriptions, sending tweets, querying tweets by hashtags/mentions, re-tweets and live delivery of tweets**.**
- Periods of **live connection** was simulated for up to 3000 users with a **Zipf** distribution for the number of subscribers.
- Designed a **JSON** based API/website using **WebSharper** to implement the WebSocket interface.

COVID-19 SPEECH AGENT / VOICE ASSISTANT - *Node.js, C#*

- Developed an animated character interface in **Unity** using **Firebase** that responds verbally to questions about the latest up-to-date stats for coronavirus using **NLP**.
- Used **Google Dialog Flow** to segregate types of queries about cases and deaths for various locations and time periods.

GOSSIP SIMULATOR WITH DISTRIBUTED PUSH-SUM ALGORITHM – *F#, AKKA.net*

- Developed a **distributed system** that spawns multiple actors which can communicate and perform aggregate computation in 4 different topologies(**Full, Line, 2D Grid** and **Imperfect 2D**).
- Optimal convergence times where all **actors**(up to **50,000**) in the topology hear a rumor 10 times were achieved.
- **Gossip-Based Distributed Push-sum** algorithm was also implemented with a parallelism of **3.5** for the topologies.

BIT-TORRENT SIMULATOR – *JAVA, Socket Programming*

- Implemented a **P2P** file-sharing system like Bit-Torrent, using **TCP/IP** protocols, **handshaking** and **bit-fields** to keep track of the different pieces in the peers.
- Incorporated special message types for **choking** and **un-choking** to increase download speeds by up to 50%.

TO-DO LIST ANDROID APP WITH GESTURE RECOGNITION – *JAVA, SQLITE, Android Studio*

- All tasks to be performed in the App were incorporated as touch gestures using **$P** (point cloud) recognition method and **handwriting recognition** for input was also implemented. Gestures for tasks were finalized after a user study.

BUILD-A-CITY USING ADVANCED DATA STRUCTURES – *C++*

- Devised an effective job-scheduling mechanism to construct a city of multiple buildings with constraints using **C++**.
- Implemented **Red-Black trees** and **Min-Heaps** to monitor current progress, time taken and total time required to complete construction of the city with minimum space and time complexity.

WORK EXPERIENCE

SAiS, Gaborone, Botswana (Oracle) | Intern **June 2017**

- Worked on **PL/SQL**, **Oracle EBS**(E-business Suite) and was involved in the development of the company website.
- Used **JavaScript, CSS**, **HTML** to develop certain sections and also resolved support issues.

SRM Institute of Science and Technology, Chennai, India | Intern **December 2016**

- Worked on a web-based project (e-lab) that evaluates code entered by students for correctness using test cases.
- Tested multiple **input** and **output case**s for coding questions using algorithms and corrected exceptions and errors.
- Currently being used by the university for laboratory hours' exercises in **Java**, **C/C++** and **Python**.

COURSES AND CERTIFCATIONS

- **'Getting Started with Python'** from University of Michigan. - 99.2%
- **'R programming'** from John Hopkins University. – 98.6%