Naveen Tumkur Ramesh Babu

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EDUCATION

The Ohio State University, College of Engineering — Columbus, United States
Master of Science in Computer Science (**GPA: 3.56/4**) — Aug 2017– May 2019

Visvesvaraya Technological University, Siddaganga Institute of Technology — Bengaluru, India
Bachelor of Engineering in Computer Science (**GPA: 8.73/10**) — Aug 2011- June 2015

RESEARCH EXPERIENCE

Graduate Research Assistant, The Ohio State University, Columbus, USA — Dec 2017 - Present
Autonomous Selfie Drone System, ReROut Lab (OSU)

- Building an Autonomous Selfie Drone which efficiently captures the best Selfie given the power, boundary and time constraints using current Drones. Research Problem is to build state-of-the-art Autonomous Drone for taking Selfie and Energy consumption model which recommends the resources and waypoints to choose.
- Used A*, K-NN algorithm for space exploration, offline and online policy learning, OpenCV and DLIB for face recognition, task parallelization using GPU. Built an efficient Energy simulator for Drone Missions. 10X Throughput increase achieved.
- ASPLOS 2019: "Autonomy Cubes: Understanding Fully Autonomous Aerial Systems" (Paper Submitted)

WORK EXPERIENCE

ORACLE, Bengaluru, India — June 2015-June 2017
Software Developer I, Communication Global Business Unit (**CGBU**)

- Oracle Communication Diameter Signaling Router (**OCDSR**) is a signaling routing node in LTE network which is primarily used to sustain huge demand of voice and data traffic.
- Complete ownership of signaling code changes, AUTs and GUI changes of Excessive Request Reroute Alarm feature.
- Contributed to white paper design, signaling code changes and GUI changes for Extracting External-Identifier from grouped AVP which was an IOT feature.
- Worked on signaling feature to assign 16 priorities with 4 congestion levels. The system had 20% less call drops.
- Took initiative to improve Compilation and running AUTs using multiple cores which gave 26% time improvement.

ACADEMIC PROJECTS

REAL-TIME SAFETY ANALYSIS IN DRONES — January 2018

- The Project monitors small cubic space and responds to unsafe situations in real-time. Complex co-ordination in swarms of drones handled. Building a model which simulates the mission and predicts the response of drone.
  Used Apache storm, yarn, MapReduce, Storage (AWS S3), OpenCV, A* Search, Machine Learning.

DRONE PATTERN RECOGNITION — October 2017

- The Project will visualize (i.e. generate a graphic) where the camera was when each image was taken and how it was posed, relative to the pattern. Crucial for Image and QR code recognition from different orientations using a drone.
- Used Python-3.6, OpenCV-2, NumPy and SciPy.

SMART SHOPPING ASSISTER — May 2015

- The project uses Cloud Computing Concepts and an Android app which gives customized offers to registered users and a portal for shopkeepers to add their products and offers.
- Enabled Data Analysis to predict customer's interest pattern to match the interest pattern to 70% accuracy.
- Developed a complete portal for the project and actively contributed to class diagram, database design.

STEGANLYSIS TOOLKIT — April 2013

- Developed a fast decoding algorithm to hide and detect text within images of the format JPG, PNG, GIF and BMP. These kinds of tools are widely used by United States military force and international law enforcement agencies.
- Implemented using Image processing, Cryptography, C# and .Net as platform.

TECHNICAL SKILLS

Programming Skills: C, C++, Java, Python, PHP, JavaScript, HTML, CSS, MySQL
Infrastructure/Platform: AWS, Git, Spark, Storm, Hadoop, Docker, Kafka, Oracle Cloud
Technology: Autonomous Driving, OpenCV, SciPy, Keras, Tensor-Flow, PyTorch, LTE, Yarn, Web Development
Coursework: Parallel Computing, Artificial Intelligence, Machine Learning, Distributed Systems, Computer Architecture, Algorithms