KARTHIK NATHAN

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PROFILE

An MS in Computer Science student at Purdue University interested in Design and Analysis of Algorithms, Machine Learning, Data mining and Internet of Things looking for an internship in Summer-2019.

EDUCATION

Master of Science in Computer Science 08/2018 – 05/2020
Purdue University, West Lafayette, United States
CGPA: 3.43 (Till First Semester)

Bachelor of Engineering in Computer Science and Engineering 08/2014 – 04/2018
College of Engineering, Anna University, India
Overall CGPA: 9.08/10 (3.92/4.0)

EXPERIENCE

Graduate Teaching Assistant, Purdue University, West Lafayette, Indiana, USA 01/2019-Present

- Currently a GTA for CS 34800(Information Systems) at Purdue University.
- Course mainly about SQL, QBE, Datalog and Hadoop.

Undergraduate Research Assistant, College of Engineering, Guindy, Chennai, India 11/2017 – 4/2018

- Developed a summarizer that condensed a document into a headline.
- Used Beam Search Algorithm coupled with Encoder-Decoder Model(RNN) to identify the main theme.
- I led the project and constructed the RNN model for the summarizer.

Undergraduate Research Assistant, College of Engineering, Guindy, Chennai, India 06/2017 – 09/2017

- Developed a Content Delivery Architecture using the Bluetooth Low Energy (BLE) Beacon framework for traditional retail stores.
- The implementation of the Beacon framework is done using Raspberry Pi as a content delivery broker to constantly advertise product information such as discounts.
- The product details were stored in a database and based on the distance of the user from the beacon, the corresponding product was advertised.
- The implementation of the architecture, which I led, consisted of a team of three.

Research Intern, Indian Institute of Technology-Madras, Chennai, India 05/2017 – 07/2017

- Typical SMS apps can only send 70 characters of an Indian Language whereas English can be sent up to 160 per SMS.
- To overcome this problem, an app was developed that conformed to the 3GPP Standard.
- The app was developed by using Data SMS and a Maximum of 150 characters could be sent from the app.
- Under the guidance of my advisor, I developed the app that conformed to the 3GPP standards.

SKILLS

Have experience in C/C++, Java, Python, Scala, SQL, HTML, CSS,XML, PHP, Android SDK, Scikit-learn, TensorFlow, Raspberry Pi, MongoDb and Arduino.

PROJECTS

Activity Recognition for Videos 04/2018 – 07/2018

- 200 videos were recorded that consisted of 7 activities namely, walking towards, handshaking, hugging, punching, walking away, pushing and kicking.
- Each video is between 6 to 10 secs and is split into ten frames. The videos were split into train and test set and an accuracy of 80% was achieved with the help of Convolutional Neural Networks(CNNS).
- Implemented by a team of 3.

Speed Control of a DC Motor using Arduino 08/2015 – 10/2015

- Recreated a DC motor Control using Arduino and Interrupts (IR sensor).
- Using feedback concepts and critical real time time-management, an accuracy of +/-5 rpm within a time span of 2-5 seconds was achieved for a 1000 rpm motor (assuming both load and no-load conditions).

PUBLICATIONS

EMOSIC — An emotion-based music player for Android
2017 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)
https://ieeexplore.ieee.org/document/8388671/

A Generic Multi-modal Dynamic Gesture Recognition System using Machine Learning
FICC-2018
arXiv:1809.05839