

# KARTHIK NATHAN

2550, Yeager Rd, 5-3 Beau Jardin Apartments, West Lafayette, IN 47906

+1(765)-775-8972

United States

nathank@purdue.edu

<https://www.linkedin.com/in/karthik-nathan-a56172162/>

<https://github.com/NathanKarthik1996>

## PROFILE

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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

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**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

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**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

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

## PROJECTS

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**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**

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**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**