KARTHICK SHANKAR

430 West Wood Street Mailbox 750, West Lafayette, IN 47906 | (765)-772-7645 | **shankak@purdue.edu** | http://karthick.io

Education

PURDUE UNIVERSITY | West Lafayette, IN   **GPA: 4.0/4.0**
Bachelor of Science in Computer Engineering   Expected May 2020

Relevant Experience

YOURMECHANIC   **Mountain View, CA**
Software Engineering Intern (Full-Stack)   May 2018 – August 2018
- Architected and built a chatbot for the Amazon Alexa, Google Home and Facebook Messenger to book diagnostic car repair services.
- Prepared a back-end server with Ruby on Rails to serve as a webhook for Dialogflow, a Natural Language Processing service by Google.
- Enabled the server to check incoming signed requests by verifying a provided SSL certificate chain to the root certificate authority.
- Designed a front-end payment checkout page using ReactJS and Stripe Elements to provide a safe and secure payment process.
- Launched the app to customers around the US to increase the efficiency of booking mobile car mechanics.

PURDUE UNIVERSITY   **West Lafayette, IN**
Student Orientation Committee   September 2018 - Present
- Orchestrating Purdue's orientation program for over 8000 new incoming students in 2019 by recruiting and training student leaders.

Undergraduate Researcher   September 2017 - Present
- Publishing a paper on detection of currency forgery by detecting what printers print fake currencies through Support Vector Machine and Gaussian Mixture model with an anomaly detection.
- Investigating the features of a custom print patch using ResNet50 and reduced dimensions using Principal Component Analysis.
- Ran simulations to detect artificial text in pictures uploaded to online fashion stores to improve user experience. (prev.)

Undergraduate Teaching Assistant   January 2017 - Present
- Mentored students on the principles of digital circuit design and Verilog programming to use programmable logic arrays.
- Managed all technical equipment and taught students the principles of design prototyping and web development.

RELIABLE AUTOMATIC DOORS SYSTEMS, LLC.   **Dubai, UAE**
Automation and Software Engineering Intern   May 2017 – August 2017
- Demonstrated knowledge of the components of Automatic Doors and company products by building an android app using Java.
- Collected qualitative information about company products and streamlined the company website to increase website traffic by 10%.
- Collaborated with the Information Technology department to formulate new search engine optimizations.

Individual Projects and Organizations

PURDUE LUNABOTICS   **West Lafayette, IN**
Vice President   September 2017 – Present
- Leading an organization that designs and fabricates an autonomous robot to mine regolith at the NASA Robotic Mining Competition.
- Set up the team webpage and a member database/check-in system using the MongoDB and NodeJS to track attendance of members.
- Engaged with the electronics team to generate PWM signals through GPIO on a BeagleboneBlack to run the motors for the drivetrain.

HANGMAN SOLVER | *Automatic Hangman Solver*   September 2018 - Present
- Compiled a database of all English words from Wikipedia and parsed this dataset to automatically guess optimal characters in Hangman.
- Used TF-IDF to get n-gram frequency and using already revealed or rejected letters to generate a list of optimal guesses.

BELLA, THE WEBPAGE ASSISTANT | *HackIllinois Hackathon*   February 2018 – April 2018
- Conceptualized an add-on for virtual assistants that can build complete websites from the ground up by speaking to it naturally.
- Executed this idea in Python using the Microsoft Bing Speech Recognition API and the LUIS machine learning framework to get 'intents'.

IEEE   **West Lafayette, IN**
Software Team Lead   September 2017 – May 2018
- Developed image processing algorithms using frameworks like R-FCN and PVA-Net to run on non-GPU systems like the Raspberry Pi.
- Implemented object detection algorithms for an unmanned aerial vehicle set to compete in the AUVSI SUAS competition.

ENGINEERING PROJECTS IN COMMUNITY SERVICE   **West Lafayette, IN**
Lead Systems Integrator / Webmaster   August 2016 – March 2018
- Delivered the backend for a 'choice board' using an Arduino Uno and several LCDs to assist children with Cerebral Palsy to take tests.

WORLD WAR II MAP | *Interactive Visualization of Temporal Geospatial Data*   November 2017
- Created a map-based web interface visualizing the timeline of WWII and highlighting important events using Javascript and LeafletJS.

MYONNAISE | *MadHacks Hackathon (Hacker's Choice Award, Human Centered Design Award)*   October 2017
- Built a motion-sensitive JS web game to help people going through rehabilitation using the MYO armband to sense muscle-movements.
- Composed a minimalistic front-end and a comprehensive backend using Node.js in a game where everything is gesture controlled.

Skills and Coursework

Proficient in Python, C, HTML, CSS, jQuery; **familiar with** Ruby on Rails, ReactJS, Alexa Skills, Google Assistant, Javascript, MATLAB, SQL, MongoDB, NodeJS, ScikitLearn, Arduino. **Courses on** *Data Structures, Software Engineering, Digital Systems, Verilog, ARM Microcontrollers.*