

# KARTHICK SHANKAR

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## OBJECTIVE

To acquire an internship in the field of Computer Science and Engineering.

## EDUCATION

**PURDUE UNIVERSITY** | West Lafayette, IN  
Bachelor of Science in Computer Engineering

GPA: 4.0/4.0  
Expected May 2020

## TECHNICAL SKILLS

Javascript • Python • C • Java • MATLAB • HTML/CSS • JQuery • SQL • MongoDB • Express • Angular • Node.js • PHP • ScikitLearn • Photoshop • Sony Vegas Pro • Cinema 4D • Illustrator • After Effects • Solidworks • CATIA • 3D Printing • Arduino • CNC/CAM •

## RELEVANT EXPERIENCE

**PURDUE UNIVERSITY** | West Lafayette, IN

*Research Assistant*

September 2017 - Present

- Investigating the capabilities of nano-photonics in the field of quantum computing by trying to encode quantum information in photons.
- Connecting layout editing software like LayoutEditor with C to automate mask designs for easier nano-fabrication.
- Running simulations to understand the effects of interactions between photons and an atom in a ring resonator using MEEP.

*EPICS Teaching Assistant*

January 2017 - Present

- Managed all technical equipment (3D Printers, Mitre Saws, Microcontrollers, Prototyping Equipment, etc.) in an engineering laboratory.
- Mentored over 200 students on the topics of electronic prototyping and web development to make effective designs in their teams.

*Physics Teaching Assistant*

January 2017 - May 2017

- Taught the basic principles of mechanics and thermodynamics to students in a physics laboratory and encouraged critical thinking.

**RELIABLE AUTOMATIC DOORS SYSTEMS, LLC.** | Dubai, UAE

May 2017 - August 2017

*Automation Systems & Software Engineering Intern*

- Demonstrated basic knowledge of the components of Automatic Doors and company products by building a showcase 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 server management methods.
- Prepared circuit designs to better understand remote controls using Autodesk Eagle and worked hands-on in programming them.

## LEADERSHIP EXPERIENCE

**PURDUE LUNABOTICS** | West Lafayette, IN

September 2017 - Present

*Vice-President*

- Leading an organization that designs and fabricates an autonomous robot to mine regolith at the NASA Robotic Mining Competition.
- Set up various communication routes between the subteams and managed the team servers and webpages.
- Engaged with the Electronics team to fix PWM signals in motor controllers and design sensor connections for object detection.

**IEEE** | West Lafayette, IN

September 2017 - Present

*Aerial Robotics Software Team Project Lead*

- Member of the software team in IEEE's Aerial Robotics, to create an unmanned aerial system to compete in AUVSI SUAS Competition.
- Developing image processing algorithms using frameworks like R-FCN and PVA-Net to run on non-GPU systems like the Raspberry Pi.
- Implementing machine learning to promote autonomy and avoid excess data transmission resulting in faster recognition speeds.

**ENGINEERING PROJECTS IN COMMUNITY SERVICE (EPICS)** | West Lafayette, IN

August 2016 - Present

*Design Lead / Webmaster*

- Partnered with VIT University in India to develop a technology that can assist children with Cerebral Palsy to take multiple-choice tests.
- Delegated work and prototyped a 'choice-board' that used an Arduino Uno to store answers collected through colorful button presses.
- Reorganized and maintained the team website to reflect ongoing and past progress with an emphasis on smooth UI/UX.

**BOILER GOLD RUSH** | West Lafayette, IN

August 2017 - Present

*Team Supervisor*

- Led a group of 14 culturally diverse incoming students through the Boiler Gold Rush Purdue orientation programme as a Team Leader.
- Guided them through various Purdue experiences to help them get assimilated into the community as Boilermakers.
- Nurturing new Team Leaders to develop them as role models and helping them make connections with new incoming Purdue students.

## PROJECTS & ACTIVITIES

**RICHARD** | Interactive Chat-bot Using Deep Learning

December 2017 - Present

- Acquired monthly raw comment data from Reddit and labelled it according to upvotes to use it as training data for the chat bot.
- Applied Neural Machine Translation using TensorFlow's Sequence-To-Sequence model with a Bidirectional Recurrent Neural Network.

**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 on the map using Javascript.
- Compiled information onto a MongoDB database and used leaflet to display the map while emphasizing on an overall minimalistic UI.

**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.