

# HARISH RITHISH

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## EDUCATION

2014 - 2018   B.Tech.   CSE   NIT Trichy

## RESEARCH INTERESTS

> Computer Vision

## EXPERIENCE

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|-----------------------|---|---|
| Nov 2018<br>July 2018 | <b>AMAZON   SOFTWARE DEVELOPMENT ENGINEER</b><br>> Worked in Amazon Appstore Tablets and Amazon Appstore Retail Website teams<br>> Worked on <b>design analysis</b> , task estimation, <b>feature development</b> , bug fixes, testing and deployment<br>> <b>Special Point of Contact</b> for an Amazon component, thereby owning the component end to end; Completely responsible for spike and development on both client & server and its maintenance<br>> Involvement in <b>design reviews</b> , scrums, <b>hackathons</b> , code reviews, ideation and knowledge sharing sessions helped me mould into a professional developer | <a href="#">Android App Development</a> <a href="#">Spring</a> <a href="#">Java</a>   |
| June 2017<br>May 2017 | <b>NESTAWAY   SOFTWARE DEVELOPMENT INTERN</b><br>> Designed and implemented a wiki for real estate data on top of MediaWiki software, with support for <b>semantic search</b> and <b>collaborative editing</b><br>> Designed and implemented a robust address capturing system that crawls real estate data from the web; Automated database population to 95% with the above software<br>> The crawled data was preprocessed, analysed & visualized using Plotly for presentation to investors   | <a href="#">MediaWiki</a> <a href="#">Data Analytics</a> <a href="#">Plotly</a> <a href="#">Scraping Bot</a>                        |
| Jan 2017<br>Dec 2017  | <b>WECP   SOFTWARE DEVELOPMENT INTERN</b><br>> Developed a serverless website for an online test portal and deployed it on Amazon Web Services<br>> Designed an <b>online post-test analysis system</b> in <b>Plotly</b> and <b>R</b> ; the analysis contains interactive plots, dynamic filters and sorting options that provide deep insights for candidate selection   | <a href="#">Serverless Architecture</a> <a href="#">Data Analytics</a> <a href="#">Plotly</a> <a href="#">R</a> <a href="#">AWS</a> |
| July 2015<br>May 2015 | <b>ZIPPR   MACHINE LEARNING INTERN</b><br>> Designed & implemented a <b>machine learning classifier</b> to parse and split Indian postal addresses<br>> Implemented a robust <b>address capturing system</b> that scrapes postal addresses from the web<br>> Automated database population of addresses to 90% & postal address classification to 80%<br>> Contributed 6 million postal addresses to <b>Open Street Maps</b>  | <a href="#">Machine Learning</a> <a href="#">Open Source</a> <a href="#">Scraping Bot</a>   |

## PROJECTS

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|--|--|---|
| <a href="#">Thesis</a>                       | <b>NEURAL QUESTION GENERATION FROM TEXT PASSAGES</b><br>> Built an <b>attention-based sequence to sequence learning model</b> that directly maps a sentence to a question; The model was <b>end-to-end trainable</b> and implemented in <b>Keras</b><br>> Employed a <b>Bi-Directional LSTM</b> as encoder and a 2-layer <b>deep LSTM</b> coupled with a global attention mechanism as decoder<br>> Experiments show a 7 % relative improvement over the base paper  | <a href="#">Deep Learning</a> <a href="#">NLP</a> <a href="#">RNN</a> <a href="#">Keras</a> |
| <a href="#">Code</a><br><a href="#">Demo</a> | <b>HUMAN FALL DETECTION FROM CAMERA FEED</b><br>> Detects human fall from cameras installed in homes and notifies family members through an app<br>> Employed <b>Adaptive Gaussian Mixture Model</b> for background subtraction, <b>Least-Squares Fitting of Ellipses</b> to estimate body boundary & <b>Motion History Images</b> to compute body movement speed<br>> The project has received over <b>115 stars on GitHub</b> and featured on <b>HackerNews top feed</b><br>> The project secured 2 <sup>nd</sup> /50 place at Sangam, adjudged by Honeywell; Sangam is a 3-month long competition for students to research & develop a high social impact product | <a href="#">Computer Vision</a> <a href="#">Machine Learning</a>                            |
| <a href="#">Code</a>                         | <b>SHAPE-BASED HUMAN ACTIVITY RECOGNITION</b><br>> Classified images into basic human activities based on distinction in human body shape<br>> Distribution of oriented rectangular patches for each body part served as feature vectors<br>> The classifier on Weizmann dataset produced good results with ROC Area of 97.8   | <a href="#">Computer Vision</a> <a href="#">Machine Learning</a>                            |

## COLLEGE COURSEWORK

> Natural Language Processing	A
> Image Processing	A
> Probability Theory	A
> Algorithms and Data Structures	A
> Linear Algebra	B

## PROGRAMMING LANGUAGES

Python	Proficient
C++	Proficient
MATLAB	Moderate
Java	Moderate
Javascript	Moderate

## MOOC COURSES

> CNN For Visual Recognition (CS231n)	Stanford
> Machine Learning	Coursera

## FRAMEWORK & LIBRARIES

Keras	Proficient
Tensorflow	Moderate
NumPy	Proficient
SciPy	Proficient
Scrapy	Proficient
OpenCV	Moderate

## STUDENT ACTIVITIES

2015-2018	<b>Student Researcher</b>	Member of Spider, Special Interest Group for Computer Science R & D; Actively took part in research projects, hackathons, discussions & knowledge sharing sessions
2018	<b>Workshop Instructor</b>	Taught Web Development with Python & Basics of Python at NIT Trichy & KLN college; The workshop was held over 2 days and attended by 150+ students; <a href="#">Feedback</a>
2014-2018	<b>Student Representative</b>	Represented the students body and acted as a bridge between students and professors; Facilitated smooth functioning of the college and resolved critical disputes
2014-2018	<b>College Football team</b>	Represented the college at various football tournaments
2018	<b>Marketing Head</b>	Lead a team of 12 for marketing & getting sponsorships for Vortex, CSE dept. symposium; Generated 300% increase in footfall & 200% revenue compared to last year
2015-2018	<b>Event Organizer</b>	Organized an on-site coding event for 200+ teams, held over 2 days <a href="#">Event site</a>
2015-2018	<b>Question Setter</b>	Designed & set competitive programming questions <a href="#">Competition Site</a>

## COMPETITIONS AND AWARDS

2 <sup>nd</sup> / 50	Sangam	A competition, adjudged by Honeywell Technologies, for students to research & develop a high social impact product; Awarded for human fall detection from camera feed
2 <sup>nd</sup> / 75	OSPC	An online competitive programming contest held on HackerRank
2 <sup>nd</sup> / 65	Math Pirates	A competition testing Statistics, Probability and Aptitude
3 <sup>rd</sup> / 75	Triathlon	A competition testing CS Fundamentals, Algorithms, Data Structures and Aptitude
Top 300/30000	Chemistry Olympiad	Qualified upto the National level in the International Chemistry Olympiad (InChO)