

# RAGHUL ASOKAN

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## EDUCATION

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### Anna University(SSNCE)

Bachelor's in Computer Science *GPA: 8.6*

Chennai, India

Aug 2012 - May 2016

### Marian Mat. Hr. Sec. School

Class XII State Board, 97%

Chennai, India

June 2011 - April 2012

## WORK EXPERIENCE

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### Zoho Corporation

*Deep Learning Engineer at ZLabs*

Chennai, India

June 2016 | Present

#### Receipt Digitizer Keras, OpenCV, Numpy

Developed an Optical Character Recognition(OCR) pipeline using Neural Networks for Zoho Expense, an online Expense Report Software, which extracts useful receipt information such as amount, date, mode of payment and currency. This end-to-end pipeline consists of various stages such as Orientation Detection, Text Detection, Text Recognition and Information Retrieval.

- Text Recognition architectures: CNN + BLSTM + CTC, CNN + CTC(Rosetta).
- Text Recognition Dataset: Synthetically generated word images using various fonts, backgrounds and image transformations.
- Single Word Accuracy(SWA) of 85%.

## PROJECTS

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### Subtitle Generator/Video Summarizer OpenCV, DeepSpeech

[https://github.com/mailcorahul/subs\\_generator](https://github.com/mailcorahul/subs_generator)

This subtitle generator pipeline consists of multiple stages such as Audio extraction, Voice Activity Detection, Segmentation, Speech-to-Text using Deep Speech and a Text Summarizer.

### Image Super-Resolution Using Deep Convolutional Networks

[https://github.com/mailcorahul/super\\_resolution](https://github.com/mailcorahul/super_resolution) A PyTorch implementation of the paper for enhancing the quality of word images used for OCR Word Recognition.

- Dataset used: Synthetically generated receipt word images.
- Accuracy - Average PSNR: 19.92 dB

### Other Computer Vision Projects

[https://github.com/mailcorahul/computer\\_vision](https://github.com/mailcorahul/computer_vision)

- e-Commerce Product Duplicate Detection using Siamese Neural Networks(One shot learning).
- Character Recognition(94 classes) using CNN. Synthetic character dataset using 9217 fonts, Accuracy - 95%.
- Text Detection using Maximally Stable Extremal Regions with increased recall and performance.
- Boundary Detection in Receipts using Structured Forests and Hough Line Transform.

### Cloud Service Ranking and Selection - A Genetic Algorithm Approach(B.E Project)

<https://github.com/mailcorahul/GA>

This project focuses on a system which uses an optimization algorithm - Genetic Algorithm for cloud service selection based on parameters such as processor speed, cost, RAM etc.

## SKILLS

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Programming Languages:	C, C++, Python, Java
Deep Learning:	Numpy, OpenCV, PyTorch, Keras
Web:	HTML, CSS, Javascript, jQuery, Apache Tomcat, CherryPy
Platforms:	Linux, Windows

## AWARDS

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Obtained Merit Scholarship for the year 2013-2014 for the securing second rank in Anna University examination.

Won first place in Coding contest in Reboot, a National level Technical Symposium organized by MCA department held at SSN College of Engineering.

Secured third place in Zia Hackathon 2018 - A Machine Learning Hackathon held at Zoho Corporation.