Raghul Asokan

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Education

Anna University(SSNCE) — Chennai, India
Bachelor's in Computer Science *GPA: 8.6* — Aug 2012 - May 2016

Marian Mat. Hr. Sec. School — Chennai, India
Class XII State Board, 97% — June 2011 - April 2012

Work Experience

Zoho Corporation — Chennai, India
Deep Learning Engineer at ZLabs — 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

Subtitle Generator/Video Summarizer *OpenCV, DeepSpeech*
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
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

- 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

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

Awards

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.