

# Ethiraj Srinivasan

Full Stack Developer and Machine Learning Enthusiast

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## EXPERIENCE

**Trakomatic**, Singapore— Computer Vision Research Scientist, Consultant

DECEMBER 2017 - PRESENT (3 months)

- Developing Data Management and Annotation feature for Smart Digital Signage with **facial recognition** prototype with **Django**.

**National University of Singapore**, Singapore— Graduate Researcher

AUGUST 2017 - PRESENT (7 months)

- Building an **avatar based open domain conversational chatbot** with facial recognition feature to engage the visitors of NUS under the guidance of **Dr. Matthew Chua** and **Prof Chuk Mun Lee (Java Evangelist)**. The application is built using **Java**, **Python** and supporting **Machine Learning** libraries (**dlib**, **keras** with **TensorFlow** as backend)

**Quantum Inventions**, Singapore— *Software Developer Intern*

FEBRUARY 2017 - APRIL 2017 (3 months)

- Enhanced the UX/UI design, developed features for a user engagement portal. The Portal was built on **Ruby on Rails** and **Postgres**.

**Pramati Technologies**, Chennai— Senior Software Development Engineer

AUGUST 2015 - DECEMBER 2016 (1.5 years)

- Involved in the development of web based portal (**Ruby on Rails**, **Memcached**, **Postgres**) for patents and built a content management application where content was manipulated, authorized and accessed based on roles.
- Responsible for conducting **Open Source Meetup**.
- Handled terabytes of data using **Solr** search engine and hold responsibility as an **author** of Sunspot Solr gem.

**Tata Consultancy Services**, Chennai— Assistant System Engineer

JANUARY 2014 - JULY 2015 (1.5years)

- Lead the development of a collaborative platform (**Ruby on Rails**, **Memcached**, **Redis**, **Resque**, **Solr**, **Postgres**) used to share the content, idea and process among group of companies.
- Developed a platform that provides **gamification**, **webinar management** and personalized **media directories**.

## RESEARCH PROJECTS

- Deep Learning Models for Medical Image Diagnostics**— Developing models capable of diagnosing lesions suspicious of malignancy in mammogram screening. **Computer vision techniques** are used to preprocess Radiological images and **Keras** library with **tensorflow** as backend to build deep learning model.

## EDUCATION

**National University of Singapore** (4.52/5)

M.Tech Software Engineering

JANUARY 2017 - APRIL 2018

**Anna University**, India (8.56/10)

B.E Electronics and Communication

SEPTEMBER 2009 - MAY 2013

## SKILLS

### Language

Ruby, Python, Java, Android, R, Scala

### Web Development

HTML, CSS, JavaScript, jQuery, CoffeeScript

### Database Management

Postgres, SQLite, MySQL, MongoDB

### Framework

Ruby on Rails, Sinatra, Django, Flask, Bootstrap, Foundation, Spark

### Technologies

Solr, Redis, Memcached, Resque

### Tools

AWS, Google Cloud, Heroku, Digital Ocean, Travis CI, Capistrano, Eclipse, Android Studio, R Studio, Git, Nginx, Rspec, Jasmine, Kafka

## AWARDS

### Star of the Learners group

Tata Consultancy Services.

### On the Spot Award

Tata Consultancy Services

### Award of Excellence

Anna University

## PROJECTS

### Machine Learning

- **Relay Activation using Facial Recognition system** - Raspberry pi controlled relay is activated by flask based facial recognition system.
- **Resource constrained project scheduling** - A combinatorial optimization problem where a set of activities and a set of resources of known characteristics are optimized using **genetic algorithm**.
- **uAsk\_** - A utilitarian **android** mobile app to get answers to questions about student life. The app is also integrated with **chatbot** implemented using **Amazon Lex** to answer frequently asked questions.
- **Movie Recommendation System** - Web log analysis of movie ratings with demographic data (gender, age and occupation) to build a **recommendation engine** to recommend movies that would suit the user using **apriori** algorithm
- **Fatality & Catastrophe Investigation** - Analyzed textual dataset of common workplace injuries to find patterns that might be useful to prevent frequently occurring accidents using **SVM classifier**, **NER** and **CFG**.
- **Sentiment Mining of Customer Reviews** - Extracted Restaurant Review for various cuisines in Singapore from Yelp's API. The text data was preprocessed and models were built to classify the review sentiments using **Naïve Bayes**, **SVM**, **K-NN classifier**
- **Social Community Expansion** - The project aims to expand the social community of Facebook users. The three major steps performed were **community detection**, identifying **influencers** in the community and **expanding** the community with a **seed set** of influencers. The community expansion was implemented using **LEMON** algorithm.
- **Spatio-Temporal Analysis of Students' Travel** - The objectives of this project were to help optimize travel times for NUS students and provide helpful information about facilities near their home or travel routes such as nearby restaurants/Hawker centers, Shopping Mall using **Geofencing**, **Hot Spot Analysis**, **Cluster** and **Outlier Analysis**. The application was built using **R Shiny** and **leaflet.js**

### Web Applications

- **Tablizer** - This application built on **Sinatra** scraps tables from either external URL or **HTML** input and displays it as **CSV**. It also allows users to download the output as **CSV** or **Excel** file.
- **CSS To Inliner** - This single page application is built on **Ruby on Rails** to combine **HTML** and **CSS** to give **HTML** with inline styles. This is extremely useful for mailer templates.
- **Url Shortner** - Url Shortner application gives a quick statistics on the short and provides both web and API based services. The application is built on **Ruby on Rails**.

### Android

- **Medtracker** - This **android** application helps you to track and record health statistics and manage medications. It includes modules such as **biometrics**, **consumption of medicines**, and **appointments with doctor** with **notifications**. In case of emergency it helps to make **SOS** calls.

## CERTIFICATIONS

Machine Learning by Stanford University on Coursera

Oracle Certified Java Professional

AMCAT Certified Data Processing Specialist

## OPEN SOURCE CONTRIBUTIONS

**Sunspot** - Sunspot is a **Ruby** library for expressive, powerful interaction with the **Solr** search engine.

**Supercache** - A totally unobtrusive add-on that runs along your **Rails** application rapidly improving your development time by caching **Activerecord Queries** and **HTTP** requests.

**Table2csv** - Converts **HTML** tables to **CSV**.

**Rails Protip** - Configurable tooltip gem written on top of a next-generation **jQuery** tooltip plugin

**Rails Fort** - A wrapper on **JavaScript** plugin that comes with **modern progress bar** for form completion and easy to configure

**Technology Icons** - An easy to use rails web font gem for technology icons.

**Devise Foundation Views** - Creates custom views for **devise** on top of **foundation** framework.

**Collection2csv** - Download **Activerecord** collection to **CSV** with minimal syntax and provides support across associations.