

# HAMSA SHWETHA VENKATARAM

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## EDUCATION

### University of Southern California

Master of Science in Computer Science

Jan 2017 - Dec 2018

CGPA 3.5

### Visvesvaraya Technological University

Bachelor of Engineering in Computer Science & Engineering

Sep 2008 - Jun 2012

CGPA 3.7

## EXPERIENCE

### NASA Jet Propulsion Laboratory & Information Retrieval and Data Science Group, USA

*Graduate Research Student*

May 2018 - Present

- Deep learning model explorations for table entity extraction from digitized documents and conversion to structured records.
- Trained SSD and Faster RCNN object detection models; created inference as Flask REST API, dockerized for model serving.
- Worked on the pipeline to generate, annotate and preprocess large volume of synthetic documents for training deep nets.

### Oracle Flexcube R&D Center, Oracle Financial Services Software Ltd., India

*Applications Developer II*

Jan 2013 - Dec 2016

- Collaborated with 4+ teams and interfaced with PMs, QA to retrofit legacy code, launch and support product enhancements.
- Designed and worked extensively on relational database schema to create efficient table indexes to optimize retrieval, deploy distributed and decentralized applications, perform consistent data replication, processing and archival.
- Reduced team's product bugs by 60% with thorough analysis, and strong functional expertise in Payments and Clearing.

### CSIR-Central Food Technological Research Institute, India

*Research Intern*

Jan 2012 - Jun 2012

- Designed an aesthetically pleasing, minimalist UI; performed data collection; schema design for faster retrieval and storage.
- Led a team of 4 in translating use cases to an optimized system design; resulted in a light, responsive Android app (~600Kb).
- *Publication: Venkataram HS., et al (2012), "healthWISE"- Android app for personal Health and Nutrition Management in Proceedings of International Conference on Current Trends in Engineering and Management, July 2012 [pdf].*

## PROJECTS

- **A Data Science perspective on UFO Sightings - Are aliens out there? | Spring 2018 | Python:** Devised a large-scale multimodal content analysis pipeline for preprocessing, Big Data extraction with OCR, storage, perform correlation analysis and create D3.js visualizations; leveraged transfer learning to adapt Inception V3 model to classify and caption UFO Images.
- **Search Engine Life Cycle | Fall 2017 | Java, Python:** Designed a pipeline to crawl multisource news data, store, build inverted index with mapreduce architecture on scalable cloud Hadoop clusters and deploy custom search engine 'ScEARCH'.
- **Artificially Intelligent Agents | Fall 2017 | Python:** Trained a strategic AI agent to effectively play Fruit Rage, a board game akin to Candy Crush, using variants of minimax, alpha-beta pruning; novel iterative deepening to prune search space.
- **'Facebook Search' Web and Mobile App | Spring 2017 | Bootstrap, Android:** Deployed PHP on Google Cloud to request and parse JSON from Facebook Graph APIs; rendered with Android material design, responsive web design patterns.

## SKILLS

- **Languages/Frameworks:** Python, C, Oracle PL/SQL, Java, C++ | TensorFlow, Apache Tika, Hadoop MapReduce
- **Mobile/Web Development:** Android | Bootstrap, HTML, CSS, JavaScript, PHP, Ajax, JSON, AngularJS, jQuery
- **Domain Expertise:** Deep Learning, Big Data Analysis, Information Retrieval, Computer Vision and Databases

## HONORS AND AWARDS

- Best Outgoing Student Award in Computer Science, Vidyavardhaka College of Engineering (2012)
- National Scholarship (top 0.05%) awarded by Ministry of Human Resource Development, Govt. of India (2008)
- Ranked 34<sup>th</sup> (top 0.01%) in National Talent Search Examinations, and awarded student scholarship (2006)