

## Education

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### Masters in Computer Science Johns Hopkins University Expected: May 2020

- *Research Assistant* (Spring '19), *Prof. Joshua Vogelstein*, Research area: *Stacked Convolutional Random Forests*.
- *Teaching Assistant* (Fall '18) for Object-Oriented Software Engineering.
- **Coursework:** AI, Machine Learning, Deep Learning, Parallel Programming, Neuro Data Design (CGPA: 3.95/4.0).

### Bachelors in Computer Science Anna University May 2016

- **Thesis:** *Automated Scenario Description for Images* - built an image captioning algorithm using deep learning.

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## Skills

- **Languages:** Python, Java, R, C, C++
- **Libraries:** PyTorch, Caffe, Keras, Scikit-Learn, OpenCV, NumPy, SciPy, Matplotlib, Pandas, Gensim, NLTK, Flask, Dash
- **Others:** AWS, Docker, DynamoDB, Elasticsearch, Cython, Git, Unix, DevOps

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## Experience

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### SDE Intern Amazon (AWS) Jun 2019 – Aug 2019

*HPC Performance Benchmarking Framework*

*Manager: Linda Hedges (Principal SDM)*

- Architected and built an extensible end-to-end automated framework that creates HPC clusters globally across all 50 AWS availability zones; installs and runs various performance benchmarks; and retrieves, parses, stores, searches and visualizes the metrics over time, via an interactive dashboard. This uncovered significant performance degradations in specific AZs.
- Helped set up the Infosphere team in the High-Performance Computing organization, being the first-ever member.

### Software Engineer Qube Cinema Technologies Jun 2016 – May 2018

*iCount & Dispatcher*

*Manager: Rajesh Ramachandran (CTO)*

- Designed and developed a 99% accurate, deep-learned, scalable viewer-demographics mining engine, using convolutional neural networks to extract the count, age, & gender of the movie watchers from low-light images of a theatre's auditorium.
- Architected and built a real-time resource allocation and optimization algorithm for making logistical business decisions and maximizing profits intelligently, based on minimum cost flow (transportation) problem and pruned search trees.

### Research Assistant Institute of Mathematical Sciences Dec 2015 - Dec 2017

*Optical Character Recognition on Indus Scripts*

*Advisor: Prof. Ronojoy Adhikari*

- Architected and implemented a deep-learned *optical character recognition engine* that can recognize the 417+ Indus script symbols from images of ancient Harappan civilization artifacts. The symbol classification module has an accuracy of 92%.
- Published this work as a research paper titled "*Deep Learning the Indus Script*". News articles covering this work were published in *The Verge*, *The Hindu*, *Times of India*, and *SBS Radio - Australia*.

### Data Scientist - Intern Serendio Inc. May 2015 - Jul 2015

*DisKoveror - Text Analytics*

*Manager: Ravi Condamoor (CEO)*

- Implemented a *universal multi-domain sentiment scorer* for text, that supports 36 domains and has an accuracy of 90%.
- Engineered a *topic modeling algorithm* using hierarchical k-means and semantic word clusters, with an accuracy of 80%.

### Research Intern Carnegie Mellon University Nov 2014 - Dec 2014

*Text-based Emotion Recognition System*

*Advisors: Prof. Bhiksha Raj & Prof. Rita Singh*

- Built a 90.9% accurate emotion classifier (7 classes) for text, using histograms built over word2vec word/phrase clusters.

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## Projects

- **mgcpy:** A comprehensive high-dimensional independence and k-sample testing Python package. The code is being merged into SciPy and the *research paper* has been submitted to the Journal of Statistical Software.
- **Distributed Panorama Construction from High-Resolution UAV Images Using Public Compute Nodes**, Indian Space Research Organization (ISRO), Smart India Hackathon 2018. Won the 1<sup>st</sup> place in this nation-wide hackathon.
- **Universally Compatible and Accessible, Software Controlled, Expandable Home Automation Systems:** Paper: "*Home Automation Systems - A Study*" in IJCA (cited 41 times). Indian Patent Ref. ID: 5729/CHE/2015.

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## Leadership & Achievements

- **Merit Scholarship** (Full), for *Excellence in Academics*, SSN College of Engineering, Anna University.
- **Government of India, Industry Mentor**, for 2 consecutive years at the *Smart India Hackathon* (world's largest).
- **Association for Computing Machinery (ACM)**, *Chairman* (2015-16), *Treasurer & Tech Lead* (2014-15), SSN CE.