2720 152nd Ave NE, Unit 561 Redmond, WA - 98052.

Satish Palaniappan

Experience

Software Engineer Microsoft Jun 2020 – Present

Customer Success Engineering

Manager: Curtis Anderson (Principal Software Engineer)

• Starting work as an applied machine learning engineer under the MARVEL team in the Customer Success Engineering (CSE) org and Experiences + Devices (E+D) engineering group. My role involves building intelligent solutions to improve the Office and Windows product experiences.

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 degrades 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.
- Developed a bot for automatically syncing theatre databases across the globe, into one unified format, using Word2Vec.

Research Assistant

Institute of Mathematical Sciences

Dec 2015 - Dec 2017

Optical Character Recognition on Indus Scripts

Advisor: Prof. Ronojov 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%.
- Designed an *internet-slang text parser* that can normalize 6 different artifacts ranging from acronyms to emoticons.

Research Intern

Carnegie Mellon University

Nov 2014 - Dec 2014

Text-based Emotion Recognition System

Advisors: Prof. Bhiksha Raj & Prof. Rita Singh

• Built a classification model for assigning emotion labels to text data, using histograms built over Word2Vec word/phrase clusters. This model can classify the 7 basic emotions with an accuracy of 90.9%.

Education

Masters in Computer Science

Johns Hopkins University

May 2020

- Teaching Assistant (Spring '20) for Machine Learning: Deep Learning, under Prof. Silvio Amir.
- Research Assistant (Spring '19), Prof. Joshua Vogelstein, Research area: Stacked Convolutional Random Forests.
- Teaching Assistant (Fall '18) for Object-Oriented Software Engineering, under Prof. Scott Smith.
- Coursework: Artificial Intelligence, Machine Learning, Deep Learning, Parallel Programming, Information Retrieval and Web Agents, Neuro Data Design (CGPA: 3.88/4.0).

Bachelors in Computer Science

Anna University

May 2016

- **Thesis:** Automated Scenario Description for Images built an image captioning algorithm using deep learning capable of describing Pokémon battle scenes with natural language descriptions.
- Scores: CGPA: 8.56/10, GRE: 324/340 (Quant: 169/170), TOEFL: 116/120.

Skills

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

Projects

- *mgcpy (hyppo)*: A comprehensive high-dimensional independence and k-sample testing Python package. The code/package has been merged into *SciPy* and the *research paper* has been submitted to the Journal of Machine Learning Research (JMLR) and 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 1st place in this nation-wide hackathon. It was covered by The Hindu & Times of India.
- *COVID-19 Search Engine*: Localized and Personalized Search Engine for keeping track of the dynamic and huge inflow of information during the COVID-19 global pandemic. Our search engine crawls, aggregates, indexes and searches/retrieves information from local news sources in Baltimore and reports back relevant and personalized results to the user.
- Pokémon VQA: Solves the Visual Question Answering problem in the *Pokémon* domain with an accuracy of 65.9%.
- Universally Compatible and Accessible, Software Controlled, Expandable Home Automation Systems: This research project was funded by the Innovation Center at the Sri Sivasubramaniya Nadar College of Engineering (SSN CE, affiliated to Anna University). It was also published as a paper titled: "Home Automation Systems A Study" in IJCA (cited 45 times). Indian Patent Ref. ID: 5729/CHE/2015.

Leadership & Achievements

- Merit Scholarship (Full), for Excellence in Academics, SSN College of Engineering, Anna University.
- Microsoft Research certified, for proficiency in "Design and Analysis of Algorithms".
- 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.
- Outstanding Student Organizer Award (2016), ACM Student Chapter, SSN CE.