

# Anand Saha

[teleported.in](http://teleported.in) | [anandsaha@gmail.com](mailto:anandsaha@gmail.com) | +91 9579355912

603, M Block, Marvel Fria, Pune - 412207, India

<https://www.linkedin.com/in/anandsaha/>

*My mission is to bring cutting edge AI research into practice as a deep learning engineer.*

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## Highlights

- 14 years of strong industry experience in building enterprise products and services
  - Hands on with deep learning and computer vision, with auxiliary interests in nlp, rl
  - Hands on with comprehending and implementing research papers
  - Hands on with effective transfer learning and optimization techniques
  - Good understanding of algorithms, data structures, distributed systems
  - Completed Fast.ai deep learning fellowship, Udacity's ML and AI Nanodegrees
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## Technologies

**Languages:** Proficient in C/C++, Python

**Frameworks:** PyTorch, Tensorflow, Keras, V-REP

**Libraries:** NumPy, Pandas, Matplotlib, Scikit-Learn, OpenCV

**Others:** Multithreading, REST, AWS, OpenStack, Object Storages, SQL, Virtualization, Distributed Systems, Storage Systems, Debugging and Performance Analysis

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## Experience

- Packt** Jan'18-Current  
Author/Course developer - Deep Learning with PyTorch (ongoing)  
I am authoring a course on "Deep Learning with PyTorch" with Packt Publication. ETA May'18.
- NURTURE.AI** Dec'17-Jan'18  
NIPS paper implementation competition participant  
Implemented and validated the paper *Training Deep Networks Without Learning Rates Through Coin Betting* in PyTorch. (<http://bit.ly/nips-cocob>)
- FAST.AI** Oct'17 - Dec'17  
International Fellow  
Implemented the paper *Fixing Weight Decay Regularization in Adam* in the fastai library in PyTorch. (<http://bit.ly/fastai-adamw>)  
Had hands-on exposure to effective transfer learning, optimization techniques, use cases in computer vision and nlp.
- UDACITY** Jul'17 - Aug'17  
ML Nanodegree Capstone

Ideated, designed and implemented a reinforcement learning based system to train a robotic arm to pick and place items using Q-learning. This was done in the V-REP simulation environment. (<http://bit.ly/rl-capstone>)

### **FLYTBASE**

AI Engineer

Jun'17 - Sep'17

Created an image processing pipeline to extract information from high resolution aerial images, catering to use cases like object detection and counting, in domains like wildlife conservation and inventory management. Made use of libraries like Tensorflow and various deep learning models. Helped them launch their AI platform (<http://bit.ly/oryx-detection>). Also worked on an algorithm to detect changes between two images using traditional vision techniques.

### **LEARNING BREAK**

AI Research & Engineering

Apr'17 - Current

Quit my job in March'17 to focus full time into AI and deep learning with the intention of bringing research in this area into practice. Towards that, I have been focusing on research paper study, implementation of research papers, effective ways to train models, setting up hardware for deep learning training, solving use cases using computer vision, reinforcement learning and nlp, taking online courses, sharing technical insights via my blog, contributing to open source etc. (<http://teleported.in/>)

### **VERITAS TECHNOLOGIES LLC**

Principal Software Engineer

Oct'15 - Mar'17

Worked on the cloud stack of NetBackup for data backups to cloud platforms like AWS and OpenStack. Developed tools to certify new cloud providers for operability with NetBackup. Served as tech lead of the team to coordinate feature engineering activities with product owner, architects and leadership.

### **SYMANTEC**

Principal Software Engineer

Mar'12 - Sep'15

Tech Lead, designed and implemented various enterprise features of NetBackup, including SharePoint protection, virtualized assets protection etc. I have mostly worked with C++ and the system stack (OS, Networking, Storage, Cloud, Databases).

### **TATA COMMUNICATIONS**

Senior Software Engineer

Sep'07 - Feb'12

Developer and maintainer of TATA Communications's machine learning based system to predict voice traffic patterns using linear regression. The system generates optimised dial plans for the upcoming hour, having direct impact on revenue.

### **GAVS TECHNOLOGIES**

Software Engineer

May'03 - Aug'07

Implemented various bespoke projects spanning technologies like C/C++, .NET, WiMax and Symbian OS. In addition to software development, wrote tech proposals, presented solutions to customers, managed teams.

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### **Course Projects (<https://github.com/anandsaha>)**

- Predicting Boston housing price
- Finding donors for charity ML
- Solving Sudoku with AI
- Building an adversarial search agent

- Clustering customers for identification
- Training a cab to drive itself
- CNN project to identify dog breed
- Create domain independent planner
- Using HMMs to recognise ASL
- RNN time series prediction
- CV: Facial keypoint detection

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## Relevant Certifications

- Fast.ai deep learning course via international fellowship Oct'17 - Dec'17  
Computer Vision, Language Models, Transfer Learning and Optimization techniques
- Udacity's Machine Learning Nanodegree Apr'17 - Jul'17  
Supervised, Unsupervised, Reinforcement, Deep Learning, Tools and Techniques
- Udacity's AI Nanodegree (Computer Vision concentration) Apr'17 - Dec'17  
Game Playing, Search, Simulated Annealing, Constraint Satisfaction, Logic and Reasoning, Planning, Bayes Nets, Hidden Markov Models, Deep Learning
- Coursera Cloud Computing Specialization (part 1 to 4) 2016  
Concepts, Applications, Networking

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## Education

- National Institute of Technology**, Tiruchirappalli 1999 - 2003  
BE, Instrumentation and Control Engineering
- Indian Institute of Sciences (IISc)**, Bangalore Summer of 2002  
I did my 3rd year summer project here studying scheduling in Real Time Operating Systems.
- Indian Institute of Technology (IIT)**, Bombay Summer of 2001  
I did my 2nd year summer project here, worked on FPGA implementation of a Network Interface Controller for Network Printer.