Vivekkumar Patel

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INTERESTS

Machine Learning, Computer Vision, Natural Language Processing, Reinforcement Learning, Data Science

EDUCATION

STANFORD UNIVERSITY
MS in Computer Science
Expected June 2019 | Palo Alto, CA
Cum. GPA: 3.67/4

IIT BOMBAY
BTech in Electrical Engineering
2013-2017 | Mumbai, India
Minor in Computer Science
Cum. GPA: 9.50 / 10.0

COURSEWORK

GRADUATE
Artificial Intelligence
Analysis of Social Networks
NLP with Deep Learning
Reinforcement Learning

UNDERGRADUATE
Machine Learning
Operating Systems
Data Structures and Algorithms
Probability and Random Processes
Crytography
Computer and Network Security

SKILLS

Python • C • Matlab
Java • C++ •
TensorFlow • Pytorch • Keras
Scikit-learn • Arduino
NumPy • Pandas
Android • MySQL
HTML • CSS

POSITIONS

TA-DIFFERENTIAL EQUATIONS, IITB
Tutored a batch of 45 students for the course. Carried out evaluations and collaborated with the course instructor regarding teaching tactics and designing a grading scheme.

INTERNSHIPS

DAIKIN | Software Engineering
May 2016 – July 2016 | Shiga, Japan

- Designed the whole system and implemented the FxLMS algorithm on their micro-controller for the task of Active Noise Cancellation.
- Accomplished an average of 4-5 dB decrease in the overall noise level, for frequencies up to 300 Hz.

ABB | Software Engineering
May 2015 – June 2015 | Bangalore, India

- Developed a library for Load Synchronisation as a part of the Load Management System (LMS) on their Process Automation Software System 800xA.
- Created the modules using Structured Text and Function Block Diagrams.

ACADEMIC PROJECTS

MACHINE COMPREHENSION | Course Project
Jan 2018 – March 2018 | Stanford University

- Re-implemented the BiDAF model from scratch using Tensorflow and suggested modifications to improve performance.
- Analysed the improvements caused by various layers in the architecture.

ROBUST RL FOR AUTONOMOUS DRIVING | Course Project
Jan 2018 – March 2018 | Stanford University

- Implemented the DDPG algorithm to train agent on TORCS simulator.
- Suggested modifications and new architectural designs to make agent robust to noisy sensor inputs.

SCALABLE RECOMMENDER SYSTEMS | Course Project
Sept 2017 – Nov 2017 | Stanford University

- Designed and implemented an algorithm based on random walks and shortest paths for non-binary rating prediction on user-item graph.
- Graph based methods scaled better than the existing techniques and performed better with equal amount of computing resources.

DEEP LEARNING FOR ATARI GAMES | Course Project
Sept 2017 – Nov 2017 | Stanford University

- Built RL agents to play Space Invaders and Q*bert.
- Implemented Vanilla Deep Q-Network (DQN), Double DQN and Dueling DQN with Experience replay using the Pytorch framework.

IMPLEMENTATION OF QC-LDPC DECODER | Btech Project
Aug 2016 – Nov 2016 | IIT Bombay

- Explored ways to construct large parity check matrices on GF(2) field that have good error correcting capability and efficiency.
- Developed the decoder using Majority Logic Decoding, to correct the received codes, in Verilog and Bluespec

ACHIEVEMENTS

2013 Ranked 64 among 150,000 candidates in JEE Advance.
2013 Ranked 121 among 1,400,000 candidates in JEE Mains.
2013 Top 0.1% in Maths and CS in standard XII C.B.S.E
2012 All India Rank 1 in C.B.S.E Group Maths Olympiad