Vamsi Krishna Reddy Satti

Contact Information

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Education

Indian Institute of Technology, Bombay — Aug 2016 – Nov 2019
BTech. in Computer Science and Engineering | CGPA : 9.13/10 *(Early Graduate)*

- BTech. Project: Towards Single Shot Multi-Person 3D Human Pose Estimation. Advised by Prof. Arjun Jain and Prof. Ganesh Ramakrishnan
- 10/10 grade in: AI & Machine Learning, Advanced Machine Learning, Linear Algebra, Deep Learning, Computer Vision + Programming component of all CS courses.

Andhra Pradesh Board of Intermediate Education — Jun 2014 - Mar 2016
Intermediate Examination (12^{th} grade) | Percentage : 98.2 %

Central Board of Secondary Education — Jun 2012 - Mar 2014
Matriculation Examination (10^{th} grade) | CGPA : 10/10

Research Experience

Indian Institute of Technology, Bombay — Aug 2019 – Nov 2019
Undergraduate Researcher

Worked with Prof. Arjun Jain and Prof. Ganesh Ramakrishnan on single shot detection approaches to Multi-Person 3D Human pose estimation on top of FAIR's maskrcnn-benchmark repository.

Industry Experience

Samsung Electronics HQ (삼성전자), Suwon, South Korea — May 2019 – Jul 2019
Software Engineer Intern

Proposed ideas for improvement in Rule Engine of the SmartThings cloud (Samsung's IoT Ecosystem). Developed a proof-of-concept for the ideas and demonstrated their usability by a customer.

Ubisoft Entertainment, Pune, India — May 2018 – Jul 2018
Game Developer Intern

Integrated social media SDKs into a game in both iOS and Android along with some bug fixes. Improved modules in server of game in Node.js to allow users to save their progress across devices.

Teaching Assistantship

CS 152 + CS 154: Abstractions and Paradigms — Jan 2018 – Apr 2018
Indian Institute of Technology, Bombay

Mentored 122 students to guide them in applying the concepts learnt during lectures in the lab sessions. Responsible to aid the instructor to prepare assignments, quizzes and evaluating them.

Honors and Awards

Project Euler Solved 200+ problems and ranked 2307 (top 0.23%) among all users — 2020
ICPC Rank 11 and 27 in Asia Kharagpur and Asia Amritapuri Online Contests — 2019
ICPC Rank 70 in Asia Amritapuri Regional Contest — 2018
ICPC Rank 18 and 36 in Asia Chennai and Asia Amritapuri Regional Contests — 2017
Advanced Performer grade in Linear Algebra course by IIT Bombay — 2017
IIT-JEE Advanced Rank 20, the standardised test for admission into IITs — 2016
AP-EAMCET Rank 1, the standardised test by Govt. of Andhra Pradesh, India — 2016
TS-EAMCET Rank 10, the standardised test by Govt. of Telangana, India — 2016
Statistics Olympiad Rank 1, by CR Rao AIMSCS, University of Hyderabad, India — 2015
KVPY Fellowship with Rank 26, by DST, Govt. of India — 2014
NASA Space Settlement Contest Honourable Mention in Grade 9 Individual category — 2013
NTSE Scholarship with Score 162/192 by MHRD, Govt. of India — 2012

Software Skills

Deep Learning – Proficient in PyTorch, NumPy. Experience with Tensorflow, Keras, scikit-learn
Languages – Proficient in C++, Python. Experience with Java, MATLAB, Bash, Javascript
Development – Experience with LaTeX, Django. Acquainted with Android, HTML, CSS, Node.js

ML-Related Self Projects

Adversarial Attacks on BERT Natural Language – Nov 2019
Implemented and explored improvements to 'Is BERT Really Robust?' by Jin *et al.* by exploiting attentions in BERT in contrast to the black-box approach of the paper.

Facial Emotion Synthesis from Speech Speech Recognition – Oct 2019
Implemented a cascaded model to transform an input face with emotion from an input speech partly using 'GANimation: Anatomically-aware Facial Animation from a Single Image' by Pumarola *et al.*.

pix2pix: Image-to-Image Translation Computer Vision – Mar 2019
Implemented an image-to-image translation method as described in the paper: 'Image-to-Image Translation with Conditional Adversarial Networks' by Phillip Isola *et al.* in PyTorch.

Image Quilting: Texture Synthesis and Transfer Image Processing – Oct 2018
Implemented a texture synthesis and transfer technique as described in the paper: 'Image Quilting for Texture Synthesis and Transfer' by Alexei A. Efros *et al.*

Simple GAN Deep Learning – Jun 2018
Implemented a simple Generative Adversarial Neural Network (GAN) in PyTorch to generate handwritten digits indistinguishable to original MNIST database in PyTorch.

Academic Coursework

Reinforcement Learning Autumn 2019
Implemented epsilon-greedy exploration, UCB, KL-UCB, and Thompson Sampling on stochastic multi-armed bandit, Linear Programming and Howard's Policy Iteration for finding optimal policy of an MDP, a SARSA agent on Windy Gridworld task as given in Sutton and Barto (2018).

AI & Machine Learning Spring 2019
Implemented Perceptron, Feed Forward NN, CNN from scratch, Ensemble methods (Bagging and AdaBoost), K-means clustering, Ridge and Lasso regression, Value Iteration in an MDP Planning setting, Minimax algorithm on Othello game and A* search on Sukoku and Shortest Path in City.

Programming Languages & Compilers Spring 2019
Developed a scanner, parser and a semantic analyzer to translate code in a C-like language that supports arithmetic expressions, control flow statements and function calls into assembly code.

Database Systems Autumn 2018
Utilized various strategies to automatically maintain indices by dynamically adapting to the database load in PostgreSQL. A depth of PostgreSQL source code was understood through the project work.

Computer Architecture Autumn 2018
Demonstrated a proof-of-concept (PoC) for the Meltdown security vulnerability as described in the paper: 'Meltdown: Reading Kernel Memory from User Space' by Lipp *et al.*

Software Systems Autumn 2017
Developed an Online Judge web application using Django Framework with admin portal and support for C++, Java, Python submissions. Created a complete discussion forum, Elo-based rating system to rank users, live contests and sandboxing during execution of code for the security of servers.

Volunteer Work

National Service Scheme (NSS), IIT Bombay Aug 2016 – Apr 2017
Volunteered in plantation, maintenance and development of a nursery with saplings collected from the campus under the 'Green Campus' initiative. Further helped in transplanting back the grown plants around the campus. Also mapped the rich biodiversity around the campus using card-labels.