ABHISEK PANDA

Bachelor of Technology | IIT Kanpur
Department of Computer Science & Engineering
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ACHIEVEMENTS

- Completed B.Tech from Dept. of Computer Science & Engineering from IIT Kanpur with **CGPA 9.3/10.0**
- **AIR 154** in JEE Advanced-2015 and **AIR 38** in JEE Mains-2015 among **1.5 million applicants**.
- **Academic Excellence Award**, 2015-16, 2016-17.
- Secured **97.2%** in class XII CBSE Board Exam & **CGPA 10.0/10.0** in class X CBSE Board Exam.
- NTSE & KVPY scholarships, Awarded by MHRD.

WORK EXPERIENCE

Backend Development Internship
Nutanix Technologies

📅 Summer 2018   📍 Bangalore, India

- Worked with the Cloud Application Lifecycle Management(CALM) team.
- Implemented an efficient and scalable plugin in Golang for the internal Cloud provider *Indra* using the vSphere api, which automated the deployment and management of virtual machines on VMware ESXi platform.
- Provided back-end support for operations like creating, deleting and managing VMs with full control over guest customizations.
- Designed meta APIs for retrieving various entities like data-centers, VMs, clusters, hosts, storage pods, etc for use in front-end.

TEACHING EXPERIENCE

Tutor - ESC101A(Fundamentals of Computing)
Prof. Purushottam Kar, Fall 2018

- Conducted tutorials for a batch of 35 students every week and assisted Instructor in designing quizzes, labs & exams.
- Mentored 3 students in a project on building an intelligent agent for playing poker.

OTHER PROJECTS

Faster Queries over large Graphs using Partial Indexing
Designed a novel algorithm to efficiently evaluate any Path Pattern Query by storing a partial transitive closure of the graph using a randomized monte carlo sampling framework.

Java to x86 compiler
Developed a compiler in Python for Java to x86 with full support for functionalities like looping, conditionals, scoping, multidimensional arrays, recursion, etc. Also provided rudimentary support for OOP features like classes and objects

Video Chat App using Python
Developed a video chat application in python from scratch by designing a new custom networking protocol. Used threading to efficiently manage the server resources during multiple video chats.

RESEARCH PROJECTS

Zero Shot Learning with Aligned VAEs
Prof. Piyush Rai, Spring 2019

- Implemented the Cross & Distribution Alignment(CADA) VAE model for Generalized Zero Shot Learning in pytorch and reproduced the results provided in original paper.
- Introduced a discriminative loss in the objective function by augmenting the base model with a discriminator which improved the accuracy in several datasets.

Image Translation using Attention
Prof. Vinay Namboodiri, Spring 2019

- Implemented the Cycle-GAN model with extra attention networks for better image translation by differentiating between foreground and background.
- Experimented with different choices of loss functions and regularizers to understand their effects on quality of generated images and stability of training.

Mixture of Experts using Discrete VAE
Prof. Arnab Bhattacharya, Fall 2018

- Proposed a novel model using the VAE framework for clustering in latent space, extending the ideas of the VaDE model
- Modeled the cluster assignment using a deep neural network, and added regularization using Virtual Adversarial Training which mitigated the need for careful pre-training.
- Extended the proposed model as a gating function for Mixture of Experts tasks and achieved better performance than existing baseline models

Using Agent Based Modelling to understand Social Cooperation
Prof. Harish Karnick, Fall 2018

- Worked on finding the effect of varying degrees of cooperation among members of a society on the well being of overall society.
- Implemented a virtual world using python to run simulations depicting interactions in society and used the statistics of these runs to find a correlation between survival and agent behaviour

Ask Me Anything: Dynamic Memory Networks
Prof. Harish Karnick, Spring 2018

- Implemented Dynamic Memory networks: a neural architecture that forms episodic memories to generate relevant answers.
- Experimented with 4 different combinations of episodic memory update and final answer generation mechanism, comparing their accuracies and training efficiencies.

Localization using Rao-Blackwellized Particle Filters
Prof. Indranil Saha, Summer 2017

- Implemented a scalable algorithm for determining the map of an unknown environment as well as predicting near accurate location of a robot in a multi-robot system.
- The algorithm relied on a rao-blackwellized particle filter for measuring the robot's position.
- A maximum error of 0.04m was obtained in location estimate of robot in environment of dimensions 30m x 30m in simulation dataset.

SKILLS

- **LANGUAGES**: Python, Golang, C/C++, Java, Octave
- **FRAMEWORKS**: Pytorch, Keras, Tensorflow
- **UTILITIES**: Git, LaTeX, Shell Scripting, Vim