PATEL UTKARSH GOVIND | CS16B037

Indian Institute of Technology Madras

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EDUCATION

Program	Institution/Board	%/CGPA	Year of completion
B.Tech in Computer Science and Engineering	Indian Institute of Technology Madras, Chennai	**8.87**	2020
H.S.C.E. (12th)	GSEB, Gandhinagar	**95.00%**	2016
S.S.C.E (10th)	GSEB, Gandhinagar	**94.17%**	2014

SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 130** in **IIT – Joint Entrance Examination Advanced** 2016.
- Secured **All India Rank 47** in **IIT – Joint Entrance Examination Mains** 2016.
- **Gujarat State topper** in **BITSAT** Examination 2016 with score **438/450.**
- Cleared both stages of **KVPY** conducted by Department of Science and Technology, Govt. of India in 2015-16
- **NTSE-2014 Scholar,** receiving scholarship from Government of India till graduation.
- **Ranked 39 at the National Level** (Team Name: 42) in **Online ACM ICPC 2017** regionals and selected for Onsite Regionals round at Amritapuri(Coimbatore) site.

EXPERIENCE

Adobe Systems | Research Intern **May 2019 – July 2019**

- Developed a **system for modeling fashion compatibility** of items in an outfit using only **visual cues**.
- **Graph Neural Networks** based model for compatibility prediction, and **Attention-based Autoencoder model** for clustering outfits based on their styles were developed as a part of project.
- Stress-tested the current evaluation metric and found a fundamental discrepancy. Suggested a new metric that is more scalable in real world scenarios. The new model **beats the current state-of-the-art** model significantly.
- **Research paper accepted in top-tier conference WACV 2020.**
- **A patent in pipeline for submission to the United States and patent office.**

Maximl Labs | Software Engineering Intern **May 2018 – July 2018**

- Designed a **regression testing framework** for testing the numerical outputs of a graph-theoretic algorithm library.
- Developed a **visual language for non-technical users** to create and edit numerical regression tests through an intuitive user interface.
- Architected a **real-time, remote** test platform that can run tests on any internet-accessible server which has the library installed.

PROJECTS

One-Shot transfer in Reinforcement Learning (Guide: Prof. Balaraman Ravindran) **January 2019 – May 2019**

- Conceptualized a framework for training agents that learn from experience on a source task, and execute without training on a different target task.

- Used coupled auto-encoders to form a common latent embedding and trained the agents using the Proximal policy optimization algorithm.
- Framework evaluated on grid-world domains and model formalized for complex domains like Sonic, CoinRun.

Deep Learning Course Assignments (Instructor: Prof. Mitesh Khapra) **January 2019 – May 2019** ✦ **CNN:** Classification of tiny ImageNet and analysis of various hyperparameters.

- **RNN:** Transliteration of words from English to Hindi via an attention based encoder-decoder model.
- **RBM:** Finding hidden representation for FashionMNIST including T-SNE analysis.

Machine Learning Course Assignments (Instructor: Prof. C Chandra Sekhar) **July 2018 – November 2018**

✦ **Static Pattern Classification** using models like K-nearest neighbors, Bayes Classifier using GMMs, Multi-class Logistic Regression based classifier, Multilayer Neural Networks, Linear/Non-linear kernel based, C-SVMs.

- **Sequential Pattern Classification** for datasets like handwritten characters data, spoken digit data using **HMM**s.
- **PCA**: Reconstruction of images based on eigen-analysis on the covariance matrix for pixel representations of images.

Scene Ontology Reconstruction (Guide: Prof. Sukhendu Das) **January 2019 – May 2019**

- Studied and re-generated the results of existing work, which includes finding bounding boxes for objects present in scene and give relations among them in the given scene.

Mini C Compiler | Course Project **(Guide: Prof. Rupesh Nasre)** **July 2018 – November 2018**

- Realized an optimized compiler for subset of C language by using Lex and Yacc.
- Implemented Lexical Analyzer, AST Constructor, Machine-Code Generator and Code Optimizer.

SKILLS

- **Programming Languages:** C, C++, Python, Matlab, x86 assembly, LISP, Prolog
- **Tools/Libraries:** Tensorflow, Pytorch, Keras, Latex, Git, MySQL ✦ **Web-development:** Django, Django REST Framework, Angular

COURSES AND LABS

- Deep Learning
- Pattern Recognition and Machine Learning
- Reinforcement Learning
- Computer Vision
- Data Structures and Algorithms (& Lab)
- Advanced Graph Algorithms*
- Secured Systems Engineering*

(7th semester)

*urses enrolled in the present semester

- Introduction to Database Systems
- Computer Organization (& Lab)
- Compiler Design (& Lab)
- Operating Systems (& Lab)
- Computer Networks (& Lab)
- Principles of Economics
- Accounting and Finance

EXTRA-CURRICULAR ACTIVITIES

- **Event Organizer** of "**Code Obfuscation**" event in "**Exebit**", the department fest of the Computer Science department at IIT Madras **(April 2018)**
- Complete organization from designing challenging questions, to conduction of competition and also evaluating the codes of participants in that event.

- Awarded **Bronze** in **Squash Schroeter 2019** (intra hostel sports tournament at IIT Madras).
- Awarded **bronze medal** in **State level Wushu tournament** (Gujarat) during secondary school.
- Keenly involved in playing **Guitar** and **flute** as hobbies.