SAURABH PATIL

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EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Master of Science in Mechanical Engineering — Dec 2022
GPA: 3.87/4.0
Relevant Coursework: Computer Vision, Machine Learning, ML with Large Datasets

Vellore Institute of Technology — Chennai, India
Bachelor of Technology in Mechanical Engineering — June 2020
GPA: 9.13/10.0

PROFESSIONAL EXPERIENCE

Raptee Energy — Chennai, India
CAD/CAE Intern — Sept-Oct 2020

- Designed and modeled a gearbox for electric motorcycle, satisfying space constraints and loading conditions
- Executed topology optimization on casing of gearbox and reduced weight of gearbox by 13%

Larsen & Toubro Heavy Engineering — Vizag, India
Intern — May-June 2019

- Identified different types of welding techniques-SMAW,GMAW to determine optimal method for production of pipes
- Performed Non-destructive testing on pipes for possible leakage due to welding

Larsen & Toubro Defense — Mumbai, India
Intern — June-July 2018

- Investigated properties of aluminum alloys of 5 and 6 series and diagnosed effect of annealing, hardening, thermal treatment and aging on alloys
- Gained insights on working of propulsion shaft and participated in workshop site to oversee assembly of shaft for testing

ACADEMIC PROJECTS

Model Pruning for Deep CNN — Fall 2021
Supervisor: Dr. Virginia Smith, Carnegie Mellon University — Pittsburgh, PA

- Created magnitude-based pruning for a CNN with 592k trainable parameters using TensorFlow library
- Achieved 97% model sparsity with loss of accuracy restricted to 2 points

3D reconstruction from 2D images — Fall 2021
Supervisor: Dr. Kenji Shimada, Carnegie Mellon University — Pittsburgh, PA

- Formulated structure from motion pipeline for a series of 2D images in a team of four
- Accomplished camera localization via PnP, non linear triangulation and bundle adjustment to generate 3D scene

Face recognition using SVM and Template matching — Spring 2019
Supervisor: Dr. Sakthivel G, VIT University — Chennai, India

- Researched and analyzed Support vector machine algorithm and template matching on Yale face dataset with an accuracy of 83% and 65% respectively
- Implemented Support vector machines algorithm using HOG feature extraction and template matching using normalized correlation

TECHNICAL SKILLS

- **Programming**: Intermediate - Python, C++; Basic - SQL
- **Libraries:** Numpy, Pandas, Matplotlib, TensorFlow, Apache Spark, Keras, OpenCV
- **Application Software:** SolidWorks, MATLAB, ANSYS (Fluent,Workbench)

ACTIVITIES

- CMU Chess Club - Member