Shubhamkar Bajrang Ayare **170050018**
Computer Science and Engineering **UG Fourth Year**
IIT Bombay **Male**
DOB: 09/05/1999

Examination	University	Institute	Year	CPI/%
Graduation	IIT Bombay	IIT Bombay	2021	8.29
Intermediate / +2	MSBSHSE	Anglo Urdo Boy's High School	2017	89.85
Matriculation	MSBSHSE	Rosary High School	2015	94.20

KEY PROJECTS

Satellite to non-Satellite Image Conversion using cGANs Autumn 2019

Prof. Ganesh Ramakrishnan (course project) *Foundations of Artificial Intelligence and Machine Learning*

- Trained a **cGAN** comprising of a **patchGAN discriminator** and a **U-net generator** to achieve the conversion
- Using **Inception Score** as the metric, compared & analyzed the performance of **different variants** of the model

Sentiment Prediction from Movie Reviews August 2020

- Used keras and numpy to obtain user sentiments on movie reviews using **word embeddings**
- Constructed and trained a **multi-layer perceptron** to obtain **88% accuracy** on **IMDB movie review dataset**

English to Hindi Neural Machine Translator Summer 2019

- Implemented a Seq2Seq architecture comprising of a **long short-term memory** based **encoder and decoder**
- Used **teacher forcing** by re-injecting decoder with its last (expected) output to speed up the model training

Conditional Random Field for Named Entity Recognition Summer 2019

- Implemented **inferencing** to obtain the best label sequences corresponding to the **named entities**
- Using **softmax**, attempted to improve **macro averaged F1 score** by introducing an auxiliary loss term

BodhiTree Django Migration *(under Prof. Kameswari Chebrolu)* Spring 2020

- Worked on an going effort towards migrating a **40k LoC codebase** from **Django** 1 to 2, and python 2 to 3, qualifying url names by namespaces, removing deprecated functions, and managing the semantic change of strings
- Used **magit, grep** and **find** to aid code merges that arose with the parallel development of the main branch

py4cl2 – python libraries for common lisp June 2019 - present

- Contributed several improvements to the **open source** project py4cl such as a **30-times speed up in large array transfers** using pickling; **function signature import**; and enabling synchronous output
- Used **semaphores** and **macros** to construct **with-python-output** to obtain python output as a string
- Enabled loading the python part of py4cl2 to be used from a variable, to make it **embeddable into lisp image**
- Improved **documentation** and started **versioning** and maintaining **releases**; currently a maintainer of py4cl2

numericals – numerical computing library for common lisp March 2020 - present

- Defined basic arithmetic **SIMD intrinsics** using the **SBCL** implementation of common lisp
- Used **broadcasting** and **custom array** type to provide basic operations with **speeds comparable to numpy**
- Provided a **with-elementwise-operations** macro to **ease open coding** non-simple arithmetic expressions
- Used **compiler-macros** to enable **compile time optimizations** for several cases

TECHNICAL SKILLS

Machine Learning Keras, Tensorflow, Numpy, OpenCV

Programming Languages Python, Common Lisp, C++, Racket, Bash, Matlab, Octave, Prolog, VHDL, SQL

KEY COURSES

- Design and Analysis of Algorithms
- Organization of Web Information
- Foundations of Intelligent and Learning Agents*
- Human Cognitive Processes*
- Artificial Intelligence and Machine Learning
- Linear Algebra
- Learning with Graphs*

*would be completed by December 2020

EXTRACURRICULARS

- **500+ Karma** on **r/lisp; 300+ reputation** on **Stackoverflow; 150+ reputation** on **AskUbuntu**
- Online courses: **Stanford's Natural Language Processing** with **Deep Learning**
  Udacity's Georgia Tech Introduction to **Computer Vision**