Somesh **Singh**

☎ (+91) 9140827410 | ✉ singhksomesh@gmail.com | ⌂ someshsingh22.github.io | someshsingh22 | someshsingh22 |
@someshsingh22 | 🎓 Somesh

Education

Birla Institute of Technology and Science, Pilani   *Goa, India*
B.E. (HONS.) IN COMPUTER SCIENCE   *Aug 2018 - Present*

- **CGPA** - 7.86/10
- **Relevant Coursework** - Object Oriented Programming, Data Structure & Algorithms, Database Systems, Machine Learning, Operating Systems, Natural Language Processing, Computer Architecture, Cognitive Neuroscience, Linear Algebra, Probability and Statistics, Computer Programming, Theory of Computation
- **Teaching Assistant** - BITS F464 **Machine Learning**, CS F469 **Information Retrieval**, CS F111 **Computer Programming**

City Montessori School   *Lucknow, India*
JUNIOR, SENIOR YEAR   *Aug 2008 - March 2018*
X (ICSE) - 92.2% | **XII (ISC)** - 96%

Work Experience

CommerceIQ   *Bangalore, India*
DATA SCIENCE INTERN   *July 2021 - Ongoing*

- Working on advertisement optimization on e-commerce platforms such as Amazon and Walmart.

MIDAS Labs, IIIT Delhi   *Delhi, India*
RESEARCH AND DEVELOPMENT INTERN   *April 2020 - Current*

- Researched on gradient estimation based white-box **adversarial attack**s on Automatic Essay Scoring (AES) systems with customized policies using Tensorflow and Pytorch.
- Worked on generating data free adversaries, investigating dataset bias and worked on post-hoc protection mechanisms against adversarial attacks.
- **Supervised by** Prof. Rajiv Ratn Shah (Dept. of CSE & HCD, IIIT Delhi).

MySmartPrice Web Technology   *Hyderabad, India*
DATA ANALYST AND SOFTWARE DEVELOPMENT INTERN   *May 2020 - July 2020*

- Built Knowledge-based active and passive **recommendation systems** using Bayesian and Non-Bayesian methods using Java, Python, Django and RESTful APIs.
- Built and deployed overall **Social Media Crawling** tools utilizing Docker container using Java, Python and Selenium integrated with cloud and parallel computing.
- **Supervised by** Sitakanta Ray, Co-Founder at Zariance and MySmartPrice.

CSIS Department, BITS Pilani   *Goa, India*
TEACHING ASSISTANT)   *Jan 2020 - Current*

- **CS F111 - Computer Programming**, **CS F469 - Information Retrieval**, **BITS F464 - Machine Learning** - Conducted and evaluated labs, tutorial and research sessions for the course and mentored over 1500 undergraduates **Supervised by** Dr. Neena Goveas, Dr. Swati Agarwal, Dr. Ashwin Srinivasan.

Publications

BPGC at SemEval-2020 Task 11: Propaganda Detection in News Articles with Multi-Granularity Knowledge Sharing and Linguistic Features based Ensemble Learning   *Workshop Paper*
SEMEVAL-2020, INTERNATIONAL WORKSHOP ON SEMANTIC EVALUATION   *2020*
Rajaswa Patil*, **Somesh Singh***, Swati Agarwal

Honors & Awards

2017   **Merit Scholar**, National Standard Examination of Chemistry, Homi Bhabha   *Mumbai, India*
         Centre for Science Education

Projects

DecepticoNLP
Adversarial Machine Learning
OPEN SOURCE PROJECT, LEAD DEVELOPER
March 2020 - Present

- DecepticoNLP is a Python based PyTorch Wrapper for robustness monitoring and adversarial debugging of NLP models powered by Travis CI.
- DecepticoNLP has implementations of various character & word level adversarial perturbations for text.
- URL: https://github.com/SforAiDl/decepticonlp

FlaiReddit
Natural Language Processing
MACHINE LEARNING WEBAPP
Apr 2020

- Built a complete text classification web-app using Python and PyTorch and deployed it on Heroku which scrapes data from Reddit, pre processes and classifies its flair tag using Transformers.
- The data extractor extracts posts from a wide time period to eliminate the Bias towards some hot topics and compares runtime and implements a minimal bayes classifier.
- URL:https://github.com/someshsingh22/FlaiReddit-MIDAS

TeamEleven
Machine Learning, Sport Analysis
COLLEGE PROJECT: BITS F464
December 2020

- NRR (Net Run Rate) Gaussian Noise Regularised Auto-Encoders for Player Embeddings in Cricket using PyTorch.
- We introduce a regularised autoencoder-based approach to generate on the fly player/team embeddings, which considers players' previous performance (form) to predict the outcomes of a match with a comparable accuracy (76%). We also predict the loss's margin in terms of Net Run Rate (NRR) instead of win/lose to get a more confident measure.
- URL:https://github.com/someshsingh22/TeamEleven

Symbolic Learning
Symbolic Learning, Capsule Networks
INFORMAL PROJECT, APPCAIR & TCS
December 2020

- Circuit Solver - Used Capsule Networks and SCAE based approaches to learn parts of electric circuit diagrams with an artificially generated dataset and transfered it on real world test data.
- URL:https://github.com/someshsingh22/Circuits

Sherlocked
Natural Language Processing
INDEPENDENT PROJECT
May 2019

- Built a text generator using LSTMs, Attention Mechanism and Transformers with TensorFlow trained on prose like Sherlock Holmes, Harry Potter and poems by John Keats.
- The project also demonstrates the join training on Sherlock Holmes and Harry Potter to highlight the successes and failures in performance on training on semantically different literature.
- URL:https://github.com/someshsingh22/Sherlocked

Snake-AI
Reinforcement Learning
INDEPENDENT PROJECT
Jan 2019

- Built A double DQN based self learning snake environment and agent using PyGame and Keras with extensive hyper parameter tuning and reward engineering.
- URL:https://github.com/someshsingh22/Snake-AI

Tech-Stack

Toolkits	Numpy, Scikit-Learn, PyStan, Tensorflow, PyTorch, Linux, MacOS, HTML, CSS, JS, Django, Flask
Programming	DSA, DBMS, OS, OOP
Languages	C/C++, Java, Python, Julia, LaTeX

Leadership & Committees

2021	**Core Member**, AXON - BITS Goa	*Goa, India*
2020	**Events Head - PoR**, Center for Technical Education	*Goa, India*
2020	**Core Member**, Society of Artificial Intelligence and Deep Learning	*Goa, India*
2020	**Speaker**, IEEE, Research in Computer Science	*Goa, India*
2020	**Instructor**, Applications in Deep Learning	*Online, India*
2020	**Instructor**, Quark, Machine learning & Deep learning	*Goa, India*
2020	**Leader**, Language Research Group	*Goa, India*