

Somesh Singh

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Education

Birla Institute of Technology and Sciences, Pilani

B.E. (HONS.) IN COMPUTER SCIENCE

Goa, India

Aug 2018 - Present

- **CGPA** - 7.33/10
- **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
- **Project Work** - News Propaganda Detection (**Published @SemEval-2020**), Data Mining and Social Media Opinion Mining in low resource languages (**Under Review**), An Impact Evaluation for Enhanced Educational Outcomes (**Presented @IIT-Roorkee**)
- **Scholarship** - Merit Performance in Practise School
- **Teaching Assistant** - CS F469 **Information Retrieval**, CS F111 **Computer Programming**

City Montessori School

JUNIOR, SENIOR YEAR

Lucknow, India

Aug 2008 - March 2018

X (ICSE) - 92.2% | XII (ISC) - 96%

Work Experience

MIDAS Labs, IIIT Delhi

RESEARCH AND DEVELOPMENT INTERN

Delhi, India

April 2020 - Current

- Research on gradient estimation based white-box **adversarial attacks** and black box attacks on Automatic Essay Scoring (AES) systems with customized policies using Tensorflow and Pytorch.
- Worked on Fake News and Fact Checking pipelines
- Bench-marking State of the Art AES Models
- **Supervised by** Prof. Rajiv Ratn Shah (Dept. of CSE & HCD, IIIT Delhi)

MySmartPrice Web Technology

DATA ANALYST AND SOFTWARE DEVELOPMENT INTERN

Hyderabad, India

May 2020 - July 2020

- Built Knowledge-based active and passive **recommender 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

TEACHING ASSISTANT

Goa, India

Jan 2020 - Current

- **CS F111 - Computer Programming** - Conducted and evaluated labs and tutorial session for the course and mentored 1000+ first year undergrads **Supervised by** Dr. Neena Goveas
- **CS F469 - Information Retrieval** - Responsible for conducting research discussions, assignments and tutorials of the course and mentored pre-final and final year undergrads **Supervised by** - Dr. Swati Agarwal

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

SEM-EVAL-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 Centre for Science Education

Mumbai, India

Projects

DecepticoNLP

OPEN SOURCE PROJECT, LEAD DEVELOPER

Adversarial Machine Learning

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

MACHINE LEARNING WEBAPP

Natural Language Processing

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>

Sherlocked

INDEPENDENT PROJECT

Natural Language Processing

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 joint 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

INDEPENDENT PROJECT

Reinforcement Learning

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

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| 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

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|------|---|----------------------|
| 2020 | Events Head - PoR , Center for Technical Education | <i>Goa, India</i> |
| 2020 | Instructor , Applications in Deep Learning | <i>Online, India</i> |
| 2020 | Leader , Language Research Group | <i>Goa, India</i> |
| 2020 | Core Member , Society of Artificial Intelligence and Deep Learning | <i>Goa, India</i> |
| 2019 | Mentor , Introduction to Machine Learning and Deep Learning | <i>Goa, India</i> |

Extracurricular Activity

Chess

CASUAL PLAYER

Lucknow, India

Aug 2018 - Present

ELO Rating 1280 (Max) | Profile: <https://www.chess.com/member/someshsingh22>

References

Dr. Swati Agarwal

Assistant Professor

Department of CS& IS

BITS Pilani, Goa

🏠 South Goa, India

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