

Saujas Vaduguru

Resumé

Education

2017–present **B.Tech. in Computer Science and M.S. (by Research) in Computational Linguistics**, *International Institute of Information Technology*, Hyderabad, GPA: 9.38/10.

Courses: Information Retrieval and Extraction*, Principles of Programming Languages*, Independent Study: Reinforcement Learning in NLP*, Optimization Methods, Deep Learning: Theory and Practices, Probabilistic Graphical Models, NLP Applications, Statistical Methods in AI (Machine Learning), Natural Language Processing, Compilers, Computational Linguistics I and II

* = In progress

2015–2017 **All India Senior Secondary Certificate Examination**, *National Public School, Indiranagar*, Bangalore, 96%.

Subjects: Mathematics, Computer Science, English, Physics, Chemistry

Work Experience

2019–present **Undergraduate Researcher**, *Language Technologies Research Centre*, IIIT Hyderabad.

Working developing interpretable methods to perform complex reasoning on linguistic patterns based on a few examples. Applying program synthesis tools for few-shot rule-learning. Working under the guidance of Dr. Monojit Choudhury and Prof. Dipti Misra Sharma.

2018–2018 **Student Intern**, *Software Engineering Research Centre*, IIIT Hyderabad.

Worked on a system to allow experts to verify OWL ontologies and modify ontologies based on votes from experts.

Projects

2020 **Wikipedia Search Engine**, *Information Retrieval and Extraction Course Project*, IIIT Hyderabad.

Built a search engine to index and search a large Wikipedia corpus.

2020 **Incorporating Dependency Grammar-based Source Syntax into Transformer-Based Neural Machine Translation**, *Natural Language Processing Applications Course Project*, IIIT Hyderabad.

Using dependency grammars to add stronger syntax bias to Transformer-based NMT models.

2020 **Interpreting neural NLP models with language processing in the brain**, *Introduction to Neural and Cognitive Modelling Course Project*, IIIT Hyderabad.

Relating vector representations in pretrained neural NLP models (BERT, GPT, distilled models) to activations in brain regions.

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📄 <https://github.com/saujasv>

- 2020 **Manifold Learning**, *Optimization Methods Course Project*, IIIT Hyderabad.
Implemented manifold learning methods (LLE, ISOMAP) for visualization and classification.
- 2019 **Discourse-based Sentence Representations for Hindi**, *Natural Language Processing Course Project*, IIIT Hyderabad.
Created discourse based representations for Hindi sentences using methods in *DisSent: Sentence Representation Learning from Explicit Discourse Relations* by Nie et al.
- 2019 **Abstract Syntax Tree Interpreter**, *Compilers Course Project*, IIIT Hyderabad.
Wrote an interpreter for a simplified C-like programming language that includes lexical analysis, syntactic parsing, abstract syntax tree construction, and interpretation.
- 2018 **Hierarchical Generalisation Recurrent Neural Networks**, *Computational Linguistics I Course Project*, IIIT Hyderabad.
Studying how a sequence-to-sequence recurrent neural network model performs on a task that requires learning a hierarchical rule as opposed to a linear rule.
- 2017 **Summer Project**, *Strand Life Sciences*, Bangalore.
Worked under the guidance of Dr. Ramesh Hariharan in getting started on data analytics on large-scale genomic data.

Teaching Experience

- 2020 **Computational Linguistics I**.
Designed and graded assignments and taught tutorial sessions for a course introducing students to computational methods in phonology, morphology, and syntax.

Activities

- Co-chair of Problem Committee for Panini Linguistics Olympiad 2018, 2019, and 2020
- Team leader and coach of the Indian team at the International Linguistics Olympiad 2018, 2019
- Represented India at the International Linguistics Olympiad in 2015 and 2016
- Active participant in the Panini Linguistics Olympiad from 2014-17, attended the Invitational Round 4 times

Awards and Honours

- Dean's List Award for Academic Performance in 2017-18 and 2018-19 (*top 20% of class*)
- Honourable Mention, International Linguistics Olympiad 2015
- Bronze Medal, Panini Linguistics Olympiad 2017, 2016, 2015

Skills

Languages Python, C, C++, C#, JavaScript (ReactJS, VueJS), Bash, \LaTeX
 Frameworks PyTorch, Microsoft PROSE SDK, Scikit-learn, OpenNMT-py, NLTK, Flask

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