

# RATNA K.N.S.R.

📍 Language and Cognition Lab, IIT  
Hyderabad  
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**INTERESTS**     Syntax, Natural Language Processing

## EDUCATION

**Indian Institute of Technology Hyderabad**, Ph.D. Linguistics, Expected: 2024 (GPA: 9/10)

- **Courses:** Logical Foundations of Language and Cognition; Language, Cognition and Computation

**University of Hyderabad**, Master in English Language Studies, 2019 (GPA: 8.8/10)

- **Relevant Courses:** Morphology and Syntax; Semantics and Pragmatics

**University of Hyderabad**, Integrated Masters in Systems Biology, 2017 (GPA: 7.5/10)

- **Relevant Courses:** Machine Learning and Biological Networks; Information Processing in Neuronal Systems; Mathematical Modeling of Biological Systems; Computer Programming and Numerical Methods; ODE; Linear Algebra; Vector Calculus; Probability and Statistics

## PUBLICATIONS

- **R. Nirupama & P. Mondal.** (2023). On the Implementation of the Algorithm for Representation of Discontinuity in Natural Language. *ICNLP 2023* (to be published in IEEE Xplore).
- **R. Nirupama & P. Mondal.** (2022). The Representation of Discontinuity and the Correspondence Principle. *PACLIC36*. <https://aclanthology.org/2022.paclic-1.3/>

## AWARDS AND HONORS

### COMPETITION

<b>Best Presentation Award</b> , 5 <sup>th</sup> International Conference on Natural Language Processing (ICNLP)	2023
<b>National Eligibility Test (Linguistics)</b>	2018 & 2019
<b>GATE – Ecology and Evolution (AIR 52)</b>	2019
<b>TSSET – Life Sciences</b>	2017
<b>Second Best Poster Award</b> , GIAN workshop on Ionic Signaling and Human Disease (cash prize)	2016

### SCHOLARSHIP

<b>Full Fee Waiver</b> , Neuromatch Deep Learning Course	2023
<b>Senior Research Fellowship</b> , Ministry of Education, Govt. of India	2021
<b>Junior Research Fellowship</b> , Ministry of Education, Govt. of India	2019
<b>GATE Scholarship</b>	2019-2022
<b>Full Tuition Fee waiver</b> based on merit	2002-03

## RESEARCH EXPERIENCES

**IIT Hyderabad, Language and Cognition Lab** 2019 – 2024

- **Achieved** a unified representation of continuity and discontinuity in natural language by **integrating** constituency relations, head-dependent relations, and functor-argument relations, for 4 simple and 4 complex discontinuous sentences. **Proposed** the correspondence principle to unify the dependency and the functor-argument relations.
- **Published** papers in ACL-Anthology and IEEE Xplore.

**University of Hyderabad, India** 2018-2019

### Independent Research

- **Designed** and **conducted** an innovative study; **Explored** the impact of academic background on language proficiency levels among 132 undergraduates in the age group of 17-23 years through questionnaires, and **analyzed** the data using Microsoft Excel.
- **Presented** the research findings at two national seminars.

**University of Hyderabad, Systems Neurology Lab**

May 2016 - May 2017

### *Masters Project*

- **Constructed** a model of the locust brain's Mushroom Body Circuitry using NEURON and analyzed data from Clamp Patch simulations using MATLAB.

### **University of Hyderabad, Laboratory of Dynamic Nucleus**

*Summer 2015*

#### *Summer Intern*

- **Analyzed** RNA-Seq datasets to **investigate** RNA expression changes during Neural Stem Cell differentiation in mouse using Microsoft Excel.
- **Contributed** as a second author to the presentation of research findings as a poster at IISER Trivandrum.

### **TALKS**

- *On the Implementation of the Algorithm for Representation of Discontinuity in Natural Language.* ICNLP, Guangzhou, 2023.
- *The Representation of Discontinuity and the Correspondence Principle* at PACLIC36, Manila (Online), 2022.
- *Choice of Discipline and English Language Proficiency Levels*, National Seminar on Innovative Practices and Research in the Era of Digi Education, Hyderabad as M.A. student, 2019.
- *Academic Background, Language Proficiency and Choice of Discipline : An Exploration*, National Seminar on Interfaces in English Language Studies: Research and Practice, Hyderabad as M.A. student, 2019.
- Postgrad Thesis Defense  
*Mushroom Body Circuitry to understand the role of feedback mechanisms from the alpha and beta lobes to the calyx*, May 2017.
- GIAN Workshop on Ionic Signaling Poster Session  
*Memory Retrieval by Activating Engram Cells in Mouse Models of Early Alzheimer's disease* by Dheeraj Roy et al., Hyderabad as I.M.Sc student - July 2016.

### **MEMBERSHIPS**

Society for the Neurobiology of Language

2023

### **SERVICE**

#### **ACADEMIC:**

#### **National Seminar on English Language Education in India**

Hyderabad

*Student Volunteer*

March, 2018

- **Coordinated** with speakers and panelists, **welcomed** and **registered** attendees, **managed** logistics, **led** Q&A sessions, and **facilitated** the smooth running of the event.

#### **Project Akshara, University of Hyderabad**

Hyderabad

*Student Volunteer*

Jan 2014 - Apr 2014

- **Trained** 150+ children in maths and English, **organized** activities to promote a more positive and supportive learning environment, **gained** experience in working with children from disadvantaged backgrounds, and **developed** strong communication, interpersonal, and teaching skills.

#### **Vigyanotsav, Junior Science Club, University of Hyderabad**

Hyderabad

*Student Volunteer*

2014

- **Demonstrated** the human brain to children from over 10 schools in the twin cities of Hyderabad and Secunderabad. **Facilitated** discussions and **answered** questions to enhance students' understanding and curiosity about human biology. **Engaged** with students to foster their interest in science.

#### **NON-ACADEMIC:**

**International Relations Cell, IITH, Ph.D. Outbound Coordinator**

2023 – Present

**Alumni Cell, IITH, Outreach Coordinator**

2023 – Present

**Martial Arts Club, IITH, Instructor**

2023 - Present

### **SKILLS**

<b>Technical</b>	Microsoft Office, Adobe Acrobat, Technical Writing, Machine Learning
<b>Computer Languages</b>	Python; experience in MATLAB, R, C
<b>Libraries&amp;Toolkits</b>	PyTorch, Keras, Linux, LaTeX, Git& GitHub
<b>Natural Languages</b>	English (Fluent), Telugu (Native), Hindi (Fluent), Russian & French (Elementary)
<b>Soft Skills</b>	Networking, Communication, Adaptability, Work ethic, Confident, Assertive