

Vivek Tripathi

PhD in Linguistics — Mathematical Linguistics — Syntax–Semantics Interface — Hindi Linguistics

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SUMMARY

PhD in Linguistics ([IIT \(BHU\)](#), GPA 10/10) specializing in formal syntax, semantics, and mathematical models of Hindi grammar. My research focuses on the syntax–semantics interface, type-theoretic approaches, and computational modeling of linguistic structure. I have published in peer-reviewed venues, contributed invited chapters, and developed formal grammatical frameworks (L_{1H} – L_{4H}) and parsing tools for Hindi. I bring interdisciplinary experience across linguistics, NLP, and language pedagogy, with a strong commitment to teaching and research in theoretical and applied linguistics. Recipient of DAAD, KVPY, and ICAR fellowships, with experience in interdisciplinary and collaborative research.

TEACHING INTERESTS / PROPOSED COURSES

- *Core Courses:* Introduction to Linguistics (LING101), Syntax, Semantics, Foundations of Syntactic Theory (LING201), Human Values and Ethics.
- *Language Courses:* English Language, Academic Writing, Hindi as L2, English Communication Skill.
- *Advanced Courses:* Formal Semantics, Computational Linguistics, Formalism and Machine Learning, Machine Translation.
- *Electives:* Language and Cognition, Philosophy of Language, Indian Philosophy, NLP Foundations.

RESEARCH INTERESTS

- Syntax–Semantics Interface
- Formal Semantics (Type Theory, Montague Grammar)
- Hindi, Sanskrit (and typologically similar) Linguistics
- Computational Linguistics & Parsing
- Indian Knowledge System (IKS)
- Logic and Language

EDUCATION

2020 - 2025	PhD - Linguistics, Humanistic Studies at IIT BHU .	(GPA: 10/10)
2013 - 2015	M.Tech - Geoinformatics, IIT Bombay (Collab.– TUD, Germany)	(GPA: 8.92/10)
2009 - 2013	B.Tech - Agri. Engineering at AAU, Anand	(GPA: 8.52/10)
2008	Class 12th CBSE Board	(78%)
2006	Class 10th CBSE Board	(84.8%)

PUBLICATIONS

Publications (Peer-reviewed & Invited)

- Tripathi, Vivek (2024). Large Language Models: A technological approach for teaching Hindi. LINCOM Studies in Asian Linguistics 100, pp. 69–114.
- Tripathi, Vivek, & Rathod, Dinesh (2024). Semantic Model for Fragment of Hindi (Part 2). Rupkatha Journal on Interdisciplinary Studies in Humanities, 16(2).
- Tripathi, Vivek, & Rathod, Dinesh (2024). Semantic Model for Fragment of Hindi (Part 1). Rupkatha Journal on Interdisciplinary Studies in Humanities, 16(1).

Manuscripts Under Review

– Hindi Light Verbs

- * Light Verbs in Hindi: A Challenge to Syntax-Semantics Isomorphism.
- * Modeling Meaning Decay in Hindi Light Verb Constructions.
- * Light Verbs as Type-Shifters in Hindi.

– Formal Semantics

- * Dynamic Auxiliaries in Hindi: A Type-Theoretic and Update-Semantic Account.
- * When Subjects Wear Postpositions: A New Theory of Agreement in Hindi.
- * Hindi Tree: An Open-Access Constituency Parser for Hindi.

– Pedagogy & L2 Hindi

- * Montague Semantics for L2 Hindi: A Pedagogical Semantic Triad (CPI) for Teaching Meaning and Inference.
- * Teaching Hindi through Semantics: A Pedagogical Framework.

FELLOWSHIPS & AWARDS

Swachhata Ideathon Award	Awarded first prize for developing ‘Susu Map: Online and Offline Integration’[2025]
Best Research Paper Award	Awarded first prize for technical work on Indian language at a national competition[2024]
Student Innovation Award	Android Application to teach Hindi through Translation, Example and Dictionary[2023]
Language Champion Award	Voice of Hindi to deliver resources, contributing to preservation and digital representation[2019]
University Gold Medal	Conferred for securing first rank in Bachelor’s degree program[2013]
- DAAD Fellowship	Awarded for collaborative research project with TU Dresden [2014]
- GATE Fellowship	Merit-based scholarship for postgraduate studies in India [2013]
- KVPY Fellowship	Selected for summer research project with faculty of choice under India’s prestigious science fellowship program [2011]
- ICAR Fellowship	Merit-based scholarship for undergraduate studies in India [2009]

ACADEMIC & RESEARCH EXPERIENCE

- **Consultant Editor-Hindi, Oxford University Press, Delhi** ~2023
Contributed to Hindi language resources including translation, pronunciation frameworks, and lexicographic revision for educational publications.
- **Research & Innovation Experience- agriera.com, mipaz.com** ~2015 - 2020
Led market research and product development (later, these projects secured significant recognitions at national competitions).
- **Project Research Engineer, IIT Bombay** ~2015 - 2018
Led research initiatives involving data analysis, digital tools, and web-based platforms. Managed interdisciplinary teams and technical communication in collaborative projects.

TEACHING EXPERIENCE

- **Hindi Language Instructor (Independent / Online)**
 - Delivered 2500+ hours of Hindi language and communication instruction to international learners across 10+ countries (including the USA, UK, Japan, and Europe).
 - Designed and implemented structured curricula integrating grammar, semantics, and communicative competence for diverse learner groups; authored 3 language-learning books (available on Amazon).
 - Developed expertise in cross-cultural communication, second language acquisition, and language pedagogy.
- **Teaching Assistant Experience (IIT BHU)**
 - Assisted in teaching undergraduate and postgraduate courses including Western Logic, Cognitive Linguistics, and Indian Philosophy, contributing to tutorials, student evaluation, and course delivery.
 - Supported instruction in Ethics and Human Values, focusing on classroom discussions and student engagement.

RESEARCH PROJECTS

These projects integrate formal linguistics, logic, and computational methods to model and analyze Indian languages.

1. **Logical Fragments of Hindi (L_{1H} - L_{4H})**
Developed a suite of formal grammatical systems modeling Hindi using propositional logic, predicate logic, type theory, and temporal logic. These fragments systematically capture sentence structure, quantification, and compositional meaning, forming a foundation for formal analysis and computational implementation of Hindi grammar.
2. **Hindi Syntax Tree Analyzer (THT Parser)**
Designed and implemented a computational parser for Hindi that generates constituency-based syntactic trees based on formal grammar rules. The tool enables structured syntactic analysis and supports applications in linguistic research and natural language processing.
3. **Computational Model of Linguistic Judgment**

Developed a logical system to model inference in Hindi sentences, integrating logical representations with linguistic theory. The tool simulates speaker judgments.

4. **Semantic Analyzer for L2 Hindi**

Designed a semantic analysis system for Hindi language learning based on set-theoretic and compositional semantic representations. The tool models meaning construction and inference, enabling structured understanding of sentences for second-language learners.

5. **Vaidika: Sanskrit Text Analysis Portal**

Contributed to the development of a digital platform for Sanskrit that supports text analysis, linguistic annotation, and structured querying, facilitating research in classical language processing and digital humanities.

CONFERENCE PRESENTATIONS & POSTERS

- Tripathi, Vivek. Vākya to Vṛkṣa: A Digital Tool for Understanding Hindi Sentence Structure. Paper presentation at National Conference on Bharatiya Bhasha Pariwar, Bharatiya Bhasha Samiti, Ministry of Education, Govt. of India (28–29 Jan **2026**).
- Tripathi, Vivek. Grammar as Infrastructure for Indian AI. Invited poster presentation at ESTIC 2025, Department of Science and Technology, Govt. of India (03–05 Nov **2025**).
- Tripathi, Vivek. Structural Analysis of Hindi Using Formal Methods. Invited poster presentation, Research and Innovation Day, IIT (BHU), Varanasi (05 Sep **2024**).
- Tripathi, Vivek. Shloka-text Classification using LSTM and Keras. Indian Knowledge System (IKS) Conference talk, IIT (BHU), Varanasi (28 Feb **2023**).

VOLUNTEER AND OUTREACH

Curator – Hindi Branch, LearnLaTeX.org

[Website Link](#)

Developed the Hindi-language LaTeX course for researchers; contributed to the Hindi translation of LearnLaTeX.org; served as point of contact for feedback and suggestions regarding localized content.

REFERENCE

1. Dr. V. Ramanathan, Associate Professor, IIT BHU.
(Email- vraman.chy@iitbhu.ac.in — Ph- 8903085140)
2. Dr. Sanjukta Ghosh, Associate Professor, IIT BHU.
(Email- sanjukta.hss@iitbhu.ac.in — Ph- 8004126923)
3. Dr. Anil Kumar Dikshit, Core Faculty and Professor, IIT Bombay.
(Email- dikshit@iitb.ac.in — Ph- 7208486792)