

Venkata Subrahmanyam G

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Education

University of Rochester

MS Computational Linguistics, CGPA: 3.83/4

Rochester, USA

2017-2019

Indian Institute of Technology Madras

Dual Degree Biological Engineering, CGPA:8.68/10

Chennai, India

2012-2017

Czech Technical University Prague

Semester exchange

Prague, Czech Republic

Fall 2015

Research Experience

Decompositional Semantic Parsing of Kinds and Particulars

Research project - Computational Linguistics, under Asst Prof. Aaron White

Rochester

2018-19

As part of the Decompositional Semantics Initiative, I've been working on an annotation protocol that moves beyond traditional definitions of genericity and habituality by decomposing the referent of arguments and predicates into simple referential properties and relating them to the kind versus individual level distinction. I've also been working on building computational models that can predict these fine grained distinctions.

Modelling Direction Maps and Vasculature in Whisker Barrel Cortex

M.Tech thesis - Computational Neuroscience, under Prof. Srinivasa Chakravarthy

IIT Madras

2016-17

As part of my Masters project, I developed models for emergence of position and direction maps in whisker barrel cortex of rat based on self organization principles. I also worked on modelling vasculature in barrel cortex using a lumped parameter model(Windkessel). In the future these two models can be integrated for a neuro-vascular model of the barrel cortex.

Papers

Govindarajan, V. S., B. Van Durme, and A. S. White (2019). "Decomposing Generalization: Models of Generic, Habitual, and Episodic Statement". In: *arXiv preprint arXiv:1901.11429*.

Relevant Coursework

Formal Semantics: As part of a course project, I analysed two competing theories of complement anaphora through an extensive literature review.

Logical Foundations of AI: I wrote several programs in LISP for various knowledge representation and reasoning tasks. My course project focused on studying different tests for machine intelligence, understanding their weaknesses, and thus leading towards the goal of a test that might help guide research in AI.

Statistical Speech and Language Processing: During the course I implemented several compu-

tational models(in Python) for language processing like HMMs, trigram language models, IBM model 1(for machine translation) and a feed forward neural network for POS tagging.

Principles of Neuroscience: I proposed a neurobiological model for laughter and humor after an extensive literature review, based on evolutionarily conserved behaviour and the language faculty in humans.

Other coursework: Machine Learning, Pragmatics, Morphology, Natural Language Processing

Skills

Programming Languages: Python, R, Matlab, Swift, C, C++, LISP

Tools: pyTorch, sciPy stack, keras, Tensorflow, pandas, RStudio

Other skills: iOS app development

Awards

iBEC(Indian Biological Engineering Competition) grant for INR 1,000,000: The grant was awarded towards pursuing iGEM 2016.

National BIRAC-IdeaThon on Antimicrobial Resistance: One of 10 teams selected from India. Designed a low-cost solution to fight antimicrobial resistance in India.

Second runner up in 3M-CII Young Innovators Challenge: Awarded for business proposal 'Wastewater treatment using Genetically modified algae'

Extracurricular activities

Coordinator, Forensics competition and workshop at Shaasta: I was the co-ordinator of the forensics competition and workshop at Shaastra(IIT Madras's technical festival) 2014. Over 250 people participated in the workshop and competition

Volunteer, National Service Scheme: I volunteered at a school in Kodambakkam, Chennai teaching visually handicapped students.