

Hitesh Ulhas Vaidya

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I am a PhD student with major in Computer Science. My interests are in Continual Learning and Neuro-mimetic AI. My research is at the intersection of Representation Learning, Associative memory and Predictive Coding.

EDUCATION

University of South Florida

PhD, Computer Science and Engineering

– Advisor: Dr. Ankur Mali

Tampa, FL

2023 - expected 2026

Rochester Institute of Technology

PhD, Computer Science

– Advisor: Dr. Travis Desell

Rochester, NY

2021 - 2023

Rochester Institute of Technology

M.S., Computer Science, GPA: 3.5/4.0

– Thesis: Vaidya, Hitesh Ulhas Mangala, “Reducing Catastrophic Forgetting in Self-Organizing Maps” (2021). Thesis. Rochester Institute of Technology.

– Advisor: Prof. Alexander Ororbia, Prof. Travis Desell

Rochester, NY

2018–2021

University of Mumbai

B.E., Computer Engineering, GPA: 7.37/10.00

– Project: “Compression of Deep Neural Networks”

– Advisor: Prof. Avinash Shrivastava

Mumbai, India

2013–2017

PUBLICATIONS

- Vaidya, H., Desell, T., Mali, A., & Ororbia, A. (2024). Neuro-mimetic task-free unsupervised online learning with continual self-organizing maps
- Vaidya, H., Desell, T., & Ororbia, A. G. (2022). Reducing catastrophic forgetting in self organizing maps with internally-induced generative replay (student abstract). *Proceedings of the AAAI Conference on Artificial Intelligence*, 36(11), 13069–13070
- Roady, R., Hayes, T. L., Vaidya, H., & Kanan, C. (2020). Stream-51: Streaming classification and novelty detection from videos. *The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*

PROFESSIONAL EXPERIENCE

Amazon

Applied Scientist Intern

- Devised a heuristic to select the ideal transformer for a given task without fine-tuning every model on it
- Crafted a ranking of finetuned Large Language Models based on their performance to determine dataset similarities

Seattle, WA

May 2023 - August 2023

Fujitsu Research of America

Research Intern

Sunnyvale, CA

June 2022 - August 2022

- Designed a system for data pre-processing by extracting features from graph visualizations
- Experimentally proved that graphs can be used as features for machine learning pipelines

RESEARCH EXPERIENCE

Rochester Institute of Technology

Graduate Research Assistant, Prof. Carlos Castellanos

Rochester, NY

May 2021 - August 2021

- Evaluation of beauty score of bacteria based on their growth pattern
- Analysis of bacteria growth using their temporally ordered image dataset

Rochester Institute of Technology

Graduate Research Assistant, Software Design and Productivity Laboratory

Rochester, NY

November 2020 - May 2021

- Detect trace links and plagiarism in software programs using Metric Learning based dual-encoder models
- Eliminate vulnerabilities by analyzing code representations obtained using Bag-of-Words and Bi-LSTM

Rochester Institute of Technology

Graduate Research Assistant, Prof. Roger Chen

Rochester, NY

September 2018 - December 2018

- Predict optimal locations for cab placement to reduce customer waiting time by performing density estimation
- Discover correlation between consumer types and their travel pattern using Linear Regression

Indian Institute of Technology, Bombay

Research Intern, Prof. Ganesh Ramakrishnan

Mumbai, India

August 2017 - May 2018

- Introduce dataset for English to Hindi Neural Machine Translation containing 1.7 million parallel sentences
- Consolidate manuscript data and perform Optical Character Recognition on Indic languages

TEACHING ASSISTANTSHIP

University of South Florida

- COP 2513: IT Object Oriented Programming Spring 2024
Prof. Hye Yi
- CIS 4935: Senior Project in Information Technology Spring 2024
Prof. Suey-Chyun Fang
- COP 3514: Program Design Fall 2023
Prof. Jing Wang
- CGS 3303: IT Concepts Fall 2023
Prof. Suey-Chyun Fang

Rochester Institute of Technology

- DSCI 640: Neural Networks Spring 2023
Prof. Travis Desell
- CMPE 679: Deep Learning Spring 2023
Prof. Dongfang Liu
- CSCI 736: Neural Networks and Machine Learning Spring 2020
Prof. Alexander Ororbia
- CSCI 635: Introduction to Machine Learning Fall 2020
Prof. Alexander Ororbia

SKILLS

- **Programming:** Python, Java, C++, CUDA, SQL, HTML5, CSS3, Latex
- **Software/Frameworks:** Tensorflow, PyTorch, Keras, Pandas, Scikit-learn, NLTK, Docker
- **Cloud Services:** Google Colab, AWS, Microsoft Azure

PROFESSIONAL ACTIVITIES

- Peer Advisor Leader (PAL) at RIT - Helping new incoming students with their onboarding process
- Association for the Advancement of Artificial Intelligence (AAAI) - Member
- International Conference on Machine Learning (ICML) 2022 - Reviewer

REFERENCES

- **Prof. Ankur Mali:** Assistant Professor, University of South Florida, FL. Email: ankurarjunmali@usf.edu
- **Prof. Alexander Ororbia:** Assistant Professor, Rochester Institute of Technology, NY. Email: agovcs@rit.edu