

Rajesh Titung

☎(+1) 718-208-0664 | ✉rt7331@rit.edu | 🌐titung-rajesh95 | 🏠titungrajesh.com.np

EDUCATION

Ph.D. in Computing and Information Sciences

2021 – Present

Rochester Institute of Technology

Rochester, NY, USA

- **Advisor:** Professor Cecilia O. Alm
- **Research Group:** Computational Linguistics and Speech Processing Lab
- **Select Courses:** NLP I, Statistical Machine Learning, Deep Learning, Bio-inspired Intelligent Systems, Human Factors in AI, Fundamentals of HCI, System Modeling & Optimization, Speech Processing
- **CGPA:** 3.94

Bachelor in Computer Engineering

2013 – 2017

Pulchowk Campus, Institute of Engineering, Tribhuvan University

Lalitpur, Nepal

PROFESSIONAL EXPERIENCE

Graduate Research Assistant

August 2021 – Present

Computational Linguistics and Speech Processing Lab, RIT

Rochester, NY, US

- Conducted an IRB-approved multimodal data collection experiment using several human tasks to study the subtleness of emotion expressions, including surprise, confusion, and frustration, focusing on both monadic and dyadic interactions in expressive task-based spoken language and dialogue.
- Investigated the benefits and trade-offs of interactive machine learning approaches, including active learning and machine teaching, for advancing affective computing.
- Co-mentored REU students and MS students in the CLaSP Lab.
- Exploring federated learning and interactive machine learning to enhance the personalization and generalization of behavioral models representing extremely diverse human behavioral expressions and perceptions.

Graduate Teaching Assistant

Fall 2023, 2024

Foundations of Artificial Intelligence, RIT

Rochester, NY, US

- Co-prepared problem sets reflecting various concepts in Artificial Intelligence.
- Created video tutorials on transfer learning, large multimodal models (LMMs), large language models (LLMs), and fine-tuning techniques for LLMs.
- Grader for technical problem sets and reading assignments (written critiques of published research papers.)
- TA office hours.

Visiting Researcher

October 2023 – November 2023

ML-Labs, SFI Center for Research Training in Machine Learning

Dublin, Ireland

- Conducting research and co-authored dissemination with collaborators at University College Dublin (UCD), Dublin City University (DCU), and Technological University Dublin (TUD).
- Using LLMs to investigate psychological vulnerabilities in phishing emails.

Teaching Assistant

August 2022 – December 2022

Natural Language Processing I, RIT

Rochester, NY, US

- Developed a shared tasks group assignment/competition with three NLP sub-tasks and data.
- Grader for problem sets and reading assignments
- TA office hours

Graduate Research Assistant

May – July 2022

NSF REU Site in Computational Sensing for Human-centered AI

Rochester, NY, US

- Co-mentored 10 undergraduate students from different universities in team-based research projects
- Held a daily technical office hour
- Organized a Mentor Café event enabling participants' near-peer interactions with Ph.D. students
- Provided individual support to students such as academic writing in LaTeX, system setup, human subject data collection, sensor use
- Conducted sensor demo session on sensors and the iMotions software

Machine Learning Engineer

July 2018 – July 2021

Fusemachines Nepal

Kathmandu, Nepal

- Led a team on Zendesk-based automated reply system
- Co-led a team on an information retrieval system for a construction project leads and analytic company
- Curated NLP, RL, and CS course materials for Fusemachines Nanodegree

PUBLICATIONS

- Faithful Chiagoziem Onwuegbuche*, **Rajesh Titung***, Esa Rantanen, Anca Delia Jurcut, Cecilia Ovesdotter Alm and Liliana Pasquale. Securing the Weakest Link: Exploring Psychological Vulnerabilities in Phishing Emails with LLMs. (Manuscript submitted and under review.)
- **Rajesh Titung** and Cecilia O. Alm. 2024. FUSE - FrUstration and Surprise Expressions: A Subtle Emotional Multimodal Language Corpus. In Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024), pages 7544–7555, Torino, Italia. ELRA and ICCL.
- Isabelle Arthur, Jordan Quinn, **Rajesh Titung**, Cecilia O. Alm, and Reynold Bailey. 2023. MDE - Multimodal Data Explorer for Flexible Visualization of Multiple Data Streams. (demo). ACII 2023: 11th International Conference on Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW).
- Cecilia O. Alm, **Rajesh Titung**, and Reynold Bailey. 2023. Pandemic Impacts on Assessment of Undergraduate Research. (poster). SIGCSE 2023: Proceedings of the 54th ACM Technical Symposium on Computer Science Education.
- **Rajesh Titung**. 2022. Interactive Machine Learning for Multimodal Affective Computing. In Proceedings of the Doctoral Consortium of 10th International Conference on Affective Computing & Intelligent Interaction (ACII 2022).
- **Rajesh Titung** and Cecilia O. Alm. 2022. Teaching interactively to learn emotions in natural language. In Proceedings of the Second Workshop on Bridging Human–Computer Interaction and Natural Language Processing, pages 40–46, Seattle, Washington. Association for Computational Linguistics.

EXTENDED ABSTRACTS WITHOUT PROCEEDINGS

- Cecilia O. Alm and **Rajesh Titung**. 2022. Engaging human interactions to learn emotions. EmoCHI'22.

POSTER PRESENTATION

- “Teaching Interactively to Learn Emotions in Natural Language”, AI@RIT Summit. Rochester Institute of Technology, Rochester, NY, October 2022.

RECOGNITIONS/AWARDS

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| AWARE-AI NSF Research Traineeship (NRT) program | Spring 2022 - present |
| <ul style="list-style-type: none">• Trainee in the AWARE-AI NSF Research Traineeship (NRT) program.• Participating in the Human sensing-AI Software Research Track led by Dr. Reynold Bailey | |
| Fusemachines AI Fellowship | 2017 |
| <ul style="list-style-type: none">• Selected into a competitive fellowship program by Fusemachines Nepal (an AI-based company in Nepal). | |
| Pulchowk Campus Achievements | 2013–2017 |
| <ul style="list-style-type: none">• College Fellowship Scholarship in each semester• Selected for an internship at E&T Nepal Pvt. Ltd. for a program of the company in collaboration with TU | |
| St. Xavier’s Partial Scholarship | 2013 |
| <ul style="list-style-type: none">• Provided to around 18 students annually | |

SERVICE

- Publicity Chair for the HCCS Workshop at IEEE PerCom (2024, 2025)
- Reviewer, International Symposium on Mixed and Augmented Reality, ISMAR 2024
- Exhibitor, Imagine RIT (2022,2023), Rochester Institute of Technology, USA
- Organizer at ML Workshop, IT Meet 2020, Kathmandu University, Nepal
- Organizer at Yomari Code Camp, Locus 2017, Pulchowk Campus, Nepal

TECHNICAL SKILLS

Languages: English, Nepali, Tamang, Hindi

Programming Languages: Python, Java, C/C++, SQL (Postgres), MongoDB

Libraries: Scikit-learn, Tensorflow, Keras, Pytorch, OpenAI Gym, NLTK, spaCy, Matplotlib, NumPy, transformers, Flower

Tools: Matlab, Jupyter Notebook, conda, pipenv, cookiecutter, Flask, peft

Developer Tools: Git, Docker, Atom, AWS, Jira

Hardware/Sensory Equipments: Pupil Labs Pupil Core Eye tracker, SMI screen-based eye tracker, Tascam audio/speech recorders, GSR Shimmer3 wearable sensors

Other Softwares: iMotions, Praat

ADDITIONAL ONLINE COURSES AND CERTIFICATIONS

Deep Reinforcement Learning Nanodegree

July 2020

- Basics of Reinforcement along with Value-based and Policy-based methods and intro to Multi-Agent RL.

Reinforcement Learning Specialization

August 2020

- A four-course degree focusing on RL fundamentals, various RL algorithms, and formalizing a task as an RL problem.

Deep Learning Specialization

June 2019

- A five courses degree focusing on Neural network, Optimization, Management, NLP, and Computer Vision.

Micromasters in Artificial Intelligence

May 2019

- A four-course degree consisting of AI, ML, Robotics, and CGI.