# Rajesh Titung

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## 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**: 3.93

### Bachelor in Computer Engineering
2013 – 2017

*Pulchowk Campus, Institute of Engineering, Tribhuvan University* — *Lalitpur, Nepal*

## PROFESSIONAL EXPERIENCE

### Graduate Teaching Assistant
August 2023 – Present

*Foundations of Artificial Intelligence, RIT* — *Rochester, NY, US*

- Prepared problem sets reflecting various concepts in Artificial Intelligence
- Grader for technical problem sets and reading assignments (Written critiques of published research papers)
- TA office hours

### Graduate Research Assistant
August 2021 – August 2023

*Computational Linguistics and Speech Processing Lab, RIT* — *Rochester, NY, US*

- **Research area:** Studying benefits and trade-offs of interactive machine learning (active learning and machine teaching) for affective computing
- Analyzing applicability and benefits of interactive machine learning (active learning and machine teaching) for affective computing
- Conducting an IRB-approved multimodal data collection experiment with language and dialogue using several human tasks and verifying tasks and stimuli for understudied emotions (surprise, confusion, frustration)
- Exploring federated learning and interactive machine learning for personalization in affective computing
- Working on representation learning for multimodal affective computing
- Providing mentorship to Masters students for their CS capstone project

### Visiting Researcher
October 2023 – November 2023

*ML-Labs, SFI Center for Research Training in Machine Learning* — *Dublin, Ireland*

- Worked with collaborators at University College Dublin (UCD), Dublin City University (DCU), and Technological University Dublin (TUD).
- Working on analyzing psychological vulnerabilities in phishing emails

### Teaching Assistant
August 2022 – December 2022

*Natural Language Processing I, RIT* — *Rochester, NY, US*

- Prepared 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
- Prepared NLP, RL, and CS course materials for Fusemachines Nanodegree

## PUBLICATIONS

- **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.

- **Rajesh Titung**. 2022. Interactive Machine Learning for Multimodal Affective Computing. In Proceedings of the Doctoral Consortium of $10^{th}$ International Conference on Affective Computing & Intelligent Interaction (ACII 2022).

- Cecilia O. Alm, **Rajesh Titung**, and Reynold Bailey. 2023. Pandemic Impacts on Assessment of Undergraduate Research. (poster). SIGCSE 2023: Proceedings of the $54^{th}$ ACM Technical Symposium on Computer Science Education.

- 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: $11^{th}$ International Conference on Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW).

## 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

**AWARE-AI NSF Research Traineeship (NRT) program**                   Spring 2022 - present
- Trainee in the AWARE-AI NSF Research Traineeship (NRT) program.
- Participating in the Human sensing-AI Software Research Track.

**Fusemachines AI Fellowship**                                                                        2017
- Selected into a highly competitive fellowship program by Fusemachines Nepal (an AI-based company in Nepal).

**Pulchowk Campus Achievements**                                                           2013–2017
- College Fellowship Scholarship in each semester and Full-fee scholarship in II/II 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
- Provided to around 18 students annually

## SERVICE

- Serving as a Publicity Chair for HCCS Workshop at IEEE PerCom 2024

- Exhibitor, Imagine RIT, 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

## EXTRA ACTIVITIES

- Participant at Hult Prize at TU, 2016

- Android App Development Training Participant, Locus 2015

- Open Software Competition Participant, Locus 2015

- LOCUS 2014 Volunteer

- Windows 8.1 Dev Camp Participant

## 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, Pandas, Matplotlib, NumPy, Seaborn
**Tools**: Matlab, Jupyter Notebook, conda, pipenv, cookiecutter, Flask
**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

### Micromasters in Artificial Intelligence                                      May 2019
- A four-course degree consisting of AI, ML, Robotics, and CGI.

### Deep Learning Specialization                                                June 2019
- A five courses degree focusing on Neural network, Optimization, Management, NLP, and Computer Vision.

### Intro to TensorFlow                                                     December 2019
- Basic introduction to Tensorflow from low level to Estimator API and model scaling using Google Cloud Platform.

### Reinforcement Learning Specialization                                       August 2020
- A four-course degree focusing on RL fundamentals, various RL algorithms, and formalizing a task as an RL problem.

### Intro to Deep Learning with PyTorch                                          June 2020
- The course focuses on basics of Deep Learning along with GAN and using AWS services including Sagemaker, Lambda, etc to train and deploy PyTorch models

### Deep Reinforcement Learning Nanodegree                                        July 2020
- Basics of Reinforcement along with Value-based and Policy-based methods and intro to Multi-Agent RL.