Kevlyn Kadamala

PhD Researcher · University of Galway

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Professional Experience

Unit for Linguistic Data, Insight Centre for Data Analytics *Galway*

Research Intern *February 2022 - August 2022*

- Worked on the Cardamom project that involves historical and under-resourced languages
- Built a web-based text annotation tool for these languages using React and Flask

Meraaki Learning *Noida (Remote)*

AI Engineer, (Intern) *August 2020 - February 2021*

- Developed production-ready models and solutions to make learning extra-curricular activities easier and accessible
- Prepared the backend, making use of Serverless functions using NodeJS and PostgreSQL as the database

Abacus Software Services *Mumbai*

Computer Vision Researcher, (Intern) *March 2020 - June 2020*

- Built a tracking system that tracks humans in a hallway, using YOLOv3, a correlation tracker with ResNet as a feature extractor
- Side projects included a gesture recognition system and a database with visualization web application

Education

University of Galway *Galway*

PhD - Artificial Intelligence *2022-2026*

- Advisor: Dr. Enda Barrett and Dr. Des Chambers
- Scholarship awarded by Science Foundation Ireland Centre for Research Training in Artificial Intelligence under Grant No. 18/CRT/6223.

University of Galway *Galway*

MSc in Artificial Intelligence *2021 - 2022*

- Final Grade - 1:1
- Completed modules that include: AI and Ethics, Principles of Machine Learning, Optimisation, Deep Learning, Agent, Multi-Agent Systems and Reinforcement Learning
- Completed thesis titled: Investigating a Neuro-Evolutionary Approach to Text Classification

Fr Conceicao Rodrigues College of Engineering *Mumbai*

BE in Computer Engineering *2017 - 2021*

- Final CGPA - 9.44
- Completed modules that include: Natural Language Processing, Distributed Computing, Artificial Intelligence and Soft Computing, Big Data and Analytics
- Completed and published final year project titled: FGTD - Face Generation from Textual Description

Projects

Image Captioning using PyTorch, GitHub, WandB *2021*

- Built an image captioning model using InceptionV4 model and RNNs
- Implemented a CNN Encoder and a RNN Encoder with Attention
- Visualised the training loop and outputs with Weights and Biases

Differentiable Augmentation for GANs, GitHub, WandB *2021*

- Minimal implementation of Differentiable Augmentation for Data-Efficient GAN Training
- Implemented with Deep Convolution Generative Adversarial Network and Self-Attention Generative Adversarial Network
- Visualised training with Weights and Biases
- Used Kornia, a differentiable computer vision library for PyTorch for augmentations

Face Generation from Textual Description, GitHub, WandB *2020 - 2021*

- Generating faces based on textual descriptions using Generative Adversarial Networks
- Extended upon an existing algorithm to create captions with the attributes provided in the CelebA dataset, to generate single as well as N captions per image
- Integrated Sentence BERT to encode these descriptions into sentence embeddings
- Performed a comparative study of three models - DCGAN, SAGAN and DFGAN, by using these sentence embeddings along with a latent noise as the inputs to the different architectures
- Calculated the Inception Scores and the FID values to compare the output images across different architectures

Publications

Published

K. Kadamala, D. Chambers, and E. Barrett, 'Enhancing HVAC control systems through transfer learning with deep reinforcement learning agents', Smart Energy, vol. 13, p. 100131, Feb. 2024, doi: 10.1016/j.segy.2024.100131.

K. Kadamala and J. Griffith, 'An Insight into NeuroEvolution and Genetic Algorithms for Text Classification', Procedia Computer Science, vol. 225, pp. 1379–1387, 2023, doi: 10.1016/j.procs.2023.10.126.

K. Deorukhkar, **K. Kadamala**, and E. Menezes, 'FGTD: Face Generation from Textual Description', in Inventive Communication and Computational Technologies, Singapore, 2022, pp. 547–562. doi: 10.1007/978-981-16-5529-6_43

Accepted

K. Kadamala, D. Chambers, and E. Barrett, 'Transfer Learning with TD3 for Adaptive HVAC Control in Diverse Building Environments', Workshop on Intelligent Agents in Science and Engineering, PAAMS 2024, accepted for publication.

K. Kadamala, D. Chambers, and E. Barrett, 'Enhancing HVAC Control Efficiency: A Hybrid Approach Using Imitation and Reinforcement Learning', ECML PKDD 2024, accepted for publication.

Teaching Experience

Present	**Python Programming**, Freelance Tutor	*GrindsWorld*
Present	**Deep Learning, Algorithms, Cloud Web Application Development & Information Systems**, Teaching Support Staff	*University of Galway*

Skills & Activites

Skills

- Python
- Deep Learning - Tensorflow, PyTorch
- Data Science Libraries - Pandas, Numpy, Scikit
- Frontend Web Development - HTML, CSS, JavaScript, React, Vue
- Backend Web Development - Node, Flask, PHP
- Database - MySQL, PostgreSQL, MongoDB, Redis

Activites

Involved with Galway Galaxy, a local football team since 2023

Completed LIFT Facilitator training at the University of Galway in September of 2021

Captained the undergraduate college football team from 2019 to 2021