AYAN SENGUPTA

Area of Interest: Machine Learning, Deep Learning, Reinforcement Learning, Control Systems

@ ayansengupta17@gmail.com Kawasaki, Japan https://www.ayansengupta17.github.io

EXPERIENCE

Researcher, Data Science Laboratory

NEC Corporation

Oct 2019 - Present Kawasaki, Japan

- Work in AI negotiation team and work in the domains of Automated Negotiation, Reinforcement Learning and Deep learning.
- Responsible for extending the boundaries of research in the field of Automated Negotiation.
- Member of UN/CEFACT as an domain expert in Automated Negotiation.

Research Assistant

Department of Electrical Engineering
IIT Bombay

August 2016 – June 2019 Mumbai, India

- Implemented an algebraic solver for partial differential equations using Python and SageMath.
- Proposed and implemented a new algorithm for boundary control of infinite dimensional systems.
- Designed the current website for Control and Computing, IIT Bombay.

EDUCATION

MTech in Electrical Engineering
Specialization: Control and Computing
IIT Bombay, Mumbai 2016–2019

B.E. in Electrical Engineering
IIEST, Shibpur 2011-2015

TECHNICAL SKILLS

Proficient At:

- Python, TensorFlow (Google Certified), Keras, scikit-learn, pandas, Flask, TF-Agents, Negmas, LaTeX, Git, SageMath

Exposure To:

- Docker, Sagemaker, HTML, CSS, Javascript, PHP, Bootstrap, MATLAB

LANGUAGES

English (Native), Japanese (JLPT N4), Hindi (Native), Bengali (Mother tongue)

PROJECTS

RL Based Autonomous Negotiating Agent Framework (2020)

Reinforcement Learning, Automated Negotiation

- Framework for creating state of the art autonomous negotiating agent

Text to image generation using DCGAN (2018)

Deep Learning, GANs

- Generates realistic image from text descriptions using Deep Convolutional GAN architecture.

Detecting Water Bodies From Satellite Images (2017)

Deep Learning, CNN

- Detect water bodies in satellite images using convolutional neural network.

Toxic Comment Classification using LSTM (2017)

Deep Learning, LSTM

- Created a Bidirectional LSTM based model for comment classification and deployed it on Heroku

Algorithm for Open-Loop Trajectory Generation of Infinite-Dimensional Systems (2019)

SageMath

- Created an algorithm for generalised approach to solving the trajectory generation problem.

COMPETITIONS

2nd position in Collusion League of Supply Chain Management League (ANAC 2020)

Silver medal in LANL Earthquake Prediction (Kaggle 2019)

Other participated Kaggle Competitions:

- Jane Street Market Prediction (Ongoing)
- Riiid Answer Correctness Prediction (2020)
- Microsoft Malware Prediction Competition (2019)
- Home Credit Default Risk Challenge (2018)

PUBLICATIONS

- Ayan Sengupta, Yasser Mohammad, and Shinji Nakadai. "An Autonomous Negotiating Agent Framework with Reinforcement Learning Based Strategies and Adaptive Strategy Switching Mechanism." arXiv preprint arXiv:2102.03588 (Accepted at AAMAS 2021).
- A. Sengupta and D. Pal. “Oberst-Riquier based Algorithm for Trajectory Generation of Infinite-Dimensional Systems” *SIAM Conference on Analysis of Partial Differential Equations (PD19)*, La Quinta, California, USA, 2019.