Aidin Kazempour

PhD Student - Computer Science

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Education

PhD Computer Science 30/09/2023 - ongoing

University of Kent, Canterbury, United Kingdom

Thesis proposal: Reassessing the Role of Centralized Training in Multi-Agent Reinforcement Learning: When is Independent Learning Enough?

M.Sc Mechatronics Engineering 14/09/2019 - 01/02/2023

University of Tabriz, Tabriz, IRAN

Thesis Topic: An Evolutionary Reinforcement Learning Algorithm for Robot Control in Cooperative Environments

- Grades: AI : 19/20, DeepLearning: 20/20, Advance Automatic Control: 18/20, Advance Engineering Mathematics: 16.5/20
- GPA : 4.00/4.00

B.Sc Mechanical Engineering 10/09/2014 - 22/09/2018

University of Tabriz, Tabriz, IRAN

- Grades: Engineering Mathematics : 19/20, Differential Equation: 20/20, Programming: 18/20, Numerical Computation: 20/20, Statistics: 16/20, Automatic Control: 15/20
- GPA : 3.02/4.00 (last 2 year : 3.37/4.00)

Experience

Graduate Teaching Assistant 🏛 21/10/2023 - 03/10/2025

University of Kent, Canterbury, UK

- Foundation of Computing (Basic Mathematics)
- Problem Solving with Data and Text (RL & NLP)
- Machine Learning Algorithms
- Deep Learning

Papers

University of Kent, Canterbury, UK

- The Effect of Attention in Cooperative MARL Environments with Shared Rewards (Submission Phase)

International Exams

- GRE:
  - ⇒ Quantitative Reasoning : 165 / 170
  - ⇒ Verbal Reasoning : 152 / 170
  - ⇒ Analytical Writing : 3 / 6
  - ⇒ Total Score : 317 + 3 / 340
- IELTS:
  - ⇒ Listening : 7.5
  - ⇒ Reading : 9
  - ⇒ Writing : 6.5
  - ⇒ Speaking : 6.5
  - ⇒ Total Score : 7.5

Projects

- The University of Tabriz

  ↪ Research-Based Project (MSc Thesis)

  - An Evolutionary Reinforcement Learning Algorithm for Robot Control in Cooperative Environments

    - Implemented QMIX (Monotonic Value Function Factorisation for Deep Multi-Agent Reinforcement Learning), a Reinforcement Learning method for environments where multiple agents cooperate or collaborate to accomplish a given task. (preparing environments, creating buffers, building neural network models, etc.)
    - Implemented a couple of Swarm Intelligence methods like Ant Colony Optimization, Gray Wolf Optimization, Particle Swarm Optimization, etc.
    - Combining QMIX & Swarm Intelligence methods to deal with sparse reward environments based on paper Evolution-Guided Policy Gradient in Reinforcement Learning

  ⋆ Under Supervision of Dr. Behruz Kuhestani

- As a AI & Programming enthusiastic

  ↪ Educational Purpose Projects

  - implementing neural networks to do classification on SVHN dataset
  - creating a Word Cloud with specific text data based on Natural Language Processing Methods
  - Using {Monte Carlo & Td Error } RL methods to solve multi armed bandit problem
  - Implementing uninformed and informed search algorithm (BFS, DFS, UCS, A*) for finding shortest path
  - Implementing a couple of sorting and searching algorithms in python
  - Visualization of crossover and mutation operators proposed in the NEAT algorithm
  - designing a CV with Latex

Skills

Programming

- Python (Advanced)
  - matplotlib & seaborn
  - pytorch
  - numpy & pandas
  - EpyMarl
  - gym

Web Development

- HTML5
- CSS3
- JavaScript

Others

- Linux
- Latex
- Git
- MATLAB
- Office
- SolidWork
- Docker

Certificates & Courses

- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
- Structuring Machine Learning Projects
- Fundamentals of Reinforcement Learning
- Prediction and Control with Function Approximation
- The Complete Web Development Bootcamp
- Complete Python Course: Beginner
- Neural Networks and Deep Learning
- Programming Foundations: Fundamentals
- Sample-based Learning Methods
- A Complete Reinforcement Learning System
- Deep Neural Networks with PyTorch

Honors and Awards

- Rank within top 5% of students in the national entrance exam (Bachelor of Science.)
- Rank first among graduating students in Master of Science.
- Getting Government Scholarship to Enter University in Master Of Science.
- Study B.Sc and M.sc at Tabriz University (one of the top 10 universities in Iran with rank 7, regarding the US News.)
- Awarded 'Graduate Teaching Assistant' Scholarship for 3.5 years from University of Kent, as well as two other research-based scholarship from United State of America (University of Alabama) & INRIA Institute (France) to pursue a PhD degree.

References

1. **Marek Grzes** Senior Lecturer of Computer Science, University of Kent,
   M.Grzes@kent.ac.uk
2. **Rogerio de lemos,** Senior Lecturer of Computer Science, University of Kent,
   R.Delemos@kent.ac.uk
3. **Behruz Koohestani,** Associate Professor of Computer Science, Tabriz University,
   b.koohestani@tabrizu.ac.ir
4. **Mohammad-Reza Noorani** Assistant Professor of Mechatronics Engineering, Tabriz University smrs.noorani@tabrizu.ac.ir