NADER ZARE

Machine Learning and Robotic Researcher, Python and C++ Programmer, Full-Stack web developer

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EXPERIENCE

Senior Research Assistant, Robotic and Machine Learning

Institute for Big Data Analytics, Dalhousie University

Sep 2019 – Current Halifax,Canada

- Developed a vessel navigation framework for training autonomous vessel navigation and trained an autonomous vessel with Deep Reinforcement Learning.
- Developed CYRUS, a 2D soccer simulation team, and employed various novel machine learning methods to solve the multi-agent learning problem.

Project Manager of Ballast System

Institute for Big Data Analytics, Dalhousie University

Sep 2019 – Current Halifax,Canada

- Managed task assignments to team members and collaborated with them throughout the development of the project.
- Engaged with research collaborators at the Department of Fisheries and Oceans Canada (DFO).
- Coordinated and assisted team members.

Full-Stack Web developer of Ballast System

Institute for Big Data Analytics, Dalhousie University

Sep 2019 – Current Halifax,Canada

- Developed back-end and front-end of the website powered by Django and MongoDB.
- Implemented an email crawling module to process received emails, download files, parse PDF forms, standardize data, store standardized data in a database, and respond to emails.
- Created web interfaces to help users in filtering queries.

C++ and Python Developer

Peykasa Message ware

Sep 2017 – Mar 2019 Tehran,Iran

- Developed and designed a C++ component to manage and monitor SMS messages among GSM network providers.
- Redesigned and developed an application with components for parsing, creating flow messages, and storing flows on ElasticSearch.

ACHIEVEMENTS

- My team, CYRUS, won first place in the RoboCup2021 competition in the Soccer Simulation 2D League.
- Won second place in the RC2018 and RC2022 in soccer simulation 2D League.
- Member of RoboCup soccer simulation 2D League committee for 6 years.

EDUCATION

B.S in INFORMATION TECHNOLOGY ENGINEERING

Shiraz University of Technology

Sep 2010 – Jun 2014

M.S in ARTIFICIAL INTELLIGENT AND ROBOTIC

khajeh Nasir Toosi University of technology

Sep 2015 – Aug 2018

PROJECTS

CYRUS Simulation Robotic Team

- I have lead CYRUS RoboCup soccer simulation 2D team since 11 years ago. "CYRUS" is one the world's most powerful soccer simulation 2D teams. I have implemented and designed many artificial intelligence algorithms and strategies for our CYRUS team.

PYRUS2D base code

- PYRUS2D is an open-source Python base code for soccer simulation 2D robot leagues. This base code is this robotic league's first complete Python base code. It includes more than 20k lines of code. Since the beginning of the project, I have led the project and been the main developer.

RCSSSERVER

- RoboCup Soccer Simulation Server is one of the most popular environments and machine learning algorithm test-bed powered by C++. In this project, I implemented a new observation model for simulated robots to make the environment close to the human observation model.

Reinforcement Vessel Navigator

- I designed and developed a Python-based vessel navigation framework based on the real world's AIS data. In this project, I trained an autonomous vessel using deep reinforcement learning to navigate through real-world maps.

Ballast Water Report System

- BWRFIS is a website developed at Dalhousie University for Transport Canada and Fisheries and Oceans Canada. I was the manager and full-stack developer of this project. As part of this project, I was responsible for managing and assigning tasks to team members and working with the Django framework and MongoDB database.

TECHNICAL SKILLS

- Python, C++, HTML, CSS, JavaScript
- Django, MongoDB, Docker, Git, Ubuntu, Redis
- Deep Learning, Reinforcement Learning, Keras, TensorFlow, NumPy, Pandas, scikit-learn