

VASILIS VALATSOS

Curriculum Vitæ

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Experience

October 2024 -
present

Software/ML Engineer

New Odyssey

Objectives

Design, develop, and integrate custom ML models tailored to business objectives. Develop end-to-end ML pipelines, from data collection to model deployment. Implement supervised, unsupervised, and reinforcement learning techniques as needed. Build and maintain data pipelines, including ETL processes. Develop relevant APIs. Provide full documentation and performance reports for models.

Skills

PyTorch, ETL pipelines, RESTful API, Docker, CI/CD, Linux, Jira, Git, BAML, Prompt Engineering

June 2022 - February
2024

Alumni Database Manager

Students For Liberty

Objectives

Design and implement data pipeline and storage solutions for the Alumni For Liberty department of SFL. Track and update information for over 10k alumni, and alumni-led orgs across the globe. Facilitate crisis response coordination to political events. Establish communication channels for the establishment of local and national alumni meetups. Contributed to Africa SFL winning Atlas Network's African Liberty Award.

Skills:

Data Analysis and Cleanup with Python, Salesforce, Web Scraping with Selenium, DevOps and Data Management with Supabase&PostgreSQL, BitBucket and Git for Version Control, Jira and Trello for tickets and project management, Confluence, NodeJS

January 2019 -
August 2020

Backend Developer

ASTERION S.A.

Objectives

Work as an independent contractor, implementing the backend database and relevant API for a real estate website

Skills:

MySQL, Django, RESTful APIs

Education

Sept 2021 - July 2024

M.Sc. Mathematics (Statistics and Data Science)

University of Turin,

Turin, Italy.

Thesis

Reinforcement Learning: Theory and Implementation in a Custom Environment.

The thesis gives a wide overview of Reinforcement Learning, a field of Machine Learning where an agent AI learns through trial and error, and then implements a state of the art algorithm, Proximal Policy Optimization (PPO) inside of a custom game environment, dubbed Pneuma. We showcase the challenges we faced and the modifications we made to the baseline PPO algorithm to ensure proper agent behaviour.

Sept 2014 - Sept 2021

B.Sc. Physics

National and Kapodistrian University of Athens,

Athens, Greece.

Thesis

The One-Dimensional Heisenberg Model, RG Methods and Numerical Simulation of the SDRG Process

The thesis presents the Heisenberg Model in one dimension for particles of spin-1/2 (ex. electrons), as well as the traditional methods for solving the deterministic version using Renormalisation Group (RG) methods. Then the thesis presents the Random Antiferromagnetic (AF) version of the model, gives the solution using Strong Disorder Renormalization Group (SDRG) methods and showcases a novel computational simulation of the process.

Projects

Personal Projects

- 2024 **Nyrids: A collection of different NLP projects.**
Melite: A solo research project, focused on the intersection between Reinforcement Learning and NLP
Nimertes: Built a foundational Large Language Model (GenAI) from scratch in PyTorch, using the Project Gutenberg open library as training data, and also translated the project from PyTorch to Nimlang, a system's programming language.
Panope: A from scratch foundational GPT using the architecture of NanoGPT
Skills:PyTorch, Natural Language Processing (NLP), Machine Learning, Large Language Models (LLMs), Data Processing, Python, Nimlang, AI Development, Linux

University Projects

- 2023 **Super Mario Network**
Implementation of the Double Deep Q-Network algorithm, which enables AI to play the Super Mario Bros game without human supervision.
Skills:
Deep Learning, Deep Reinforcement Learning, Double Deep Q-Network (DDQN), PyTorch, AI, Machine Learning, Algorithm Development, Python, Neural Networks
- 2022 **Prehistoric Human Dispersion: The Exodus from Africa**
Model of the Prehistoric Out Of Africa (OOA) event, using Q-Learning, a reinforcement learning algorithm, to simulate the movement of early humans from Africa to the rest of the world.
Skills:
Q-Learning, Reinforcement Learning, Simulation Modeling, Machine Learning, Algorithm Development, Mathematical Modeling
- 2022 **The Black-Schöles Model for financial applications**
Simulation of the Black-Schöles model, used in financial markets as a way to estimate the price of options.
Skills:
Financial Modeling, Option Pricing, Quantitative Analysis, Financial Mathematics

Languages

Native *Greek*
Fluent *English*
Basic *Italian*

*Mastery of Proficiency (C2 level, Michigan ECPE)
A1 level, certified by University of Turin*