Work on AIMA-Python
Writing tutorials and implementing algorithms for aima-python

Antonis Maronikolakis   *MrDupin on GitHub*   *antmarakis@programmers.gr*

Proposal

I will write tutorials for algorithms using Jupyter/IPython Notebooks, providing visualization and graphing via matplotlib (or other means) to explanations whenever that will help get the concepts across. Furthermore, I will add tests and finish incomplete implementations of the algorithms found in aima-python, while also implementing algorithms for the new edition of the book. As a bonus, I will construct a guide on how to write Notebooks, so that work on them in the future is smoother.

My Work on the Repository (*commits* and *open pull requests*)

My main contributions to the project so far (with an asterisk, *, are marked PRs pending merge):

- Learning Notebook: Wrote tutorials for the Perceptron, k-Nearest Neighbors and PluralityLearner algorithms and added sections for DataSet and Distance* functions.

- Text Notebook: Wrote tutorials on Text Models and the Viterbi Segmentation (#352).

- Grid Notebook: Wrote tutorials for the functions in grid.py (#358 and #459*).

- CSP Notebook: Added section for the Tree CSP Solver (#433*).

- Completed Implementations: Tree CSP Solver (#401 and #434*), Continuous Naive Bayes*, Transition Model of MDP*.

- Tests: Learning (#376, #314 and #410), Grid*, Text, RL*, MDP* and CSP*.

- Bug Fixing: LinearLearner and DataSet functions.

- Added functions for the Hamming and Euclidean* Distances, DataSet class, Gaussian*.

- Gave feedback and suggestions to users. Examples include #424, #437, #443 and #466.

Qualifications

- I have been maintaining a blog on Computer Science and Machine Learning since November, with many of my classmates consulting it alongside their studies. I have also contributed articles to GeeksForGeeks (scheduled) and TutorialHorizon (kNN, kMeans).

- I wrote a Machine Learning library that is being used by fellow students to understand the algorithms of relevant courses. The library is written in Python with readability in mind and includes algorithms such as *Neural Network, Perceptron, Naive Bayes* and others.

- I was a class assistant for Algorithms and Computation Theory courses, helping students with exercises.

About Me

I am a Greek undergraduate student studying at the University of Piraeus. My main areas of interest are Artificial Intelligence, in particular Machine Learning and Natural Language Processing, and Algorithm Design. I am mainly writing in Python, but I have dabbled in C++, C# and Golang too. I also greatly enjoy teaching others and writing code for academic projects.

I have received a university scholarship for academic excellence and I frequently take part in computer science competitions, among others reaching the national finals in Microsoft's *Imagine Cup* competition two times in a row.

I love reading and writing, both in science and in fiction. I have written many computer science tutorials, while I also have gathered a following in online fiction writing communities for my work (plus stories of mine have been published in an anthology).

The opportunity to work on this project is exciting, especially since the *AIMA* book is one of my favorite pieces of writing. It was that book that sparked my love for scientific writing, with the colorful, concise prose and the occasional dose of humor inspiring me to start writing on my own. I would love the chance to help in the repository under a mentor.

Contact Details

Full Name: Antonis Maronikolakis
E-Mail: antmarakis@programmers.gr / antmarakis96@gmail.com
GitHub: MrDupin