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Subject: To apply for Resident Research position

To whom it may concern

This letter is to express my interest Research position. I believe that my previous educational and research experiences as well as my interests in the fields of Machine Learning (ML) and Data Science can be well-coupled with this announced position.

I started to theoretically learn the basics of ML topics along with my master's courses. I had courses like Pattern Recognition, Neural Network, Evolutionary Algorithms, Fuzzy Systems, and a review on ML models. Later, this knowledge was extended with practical ML application during my and Ph.D. thesis. It was on the integration of Evolutionary Algorithms, Fuzzy Systems, and Big Data, aiming at the automatic extraction of interpretable predictive models from a large amount of data. This can be seen under the umbrella of eXplainable Artificial Intelligence (XAI), the emerging topic which can be well combined with ML techniques to build straightforward yet efficient learning models. I had also a one-year research stay at the University of Granada in Spain, where I was able to improve my knowledge about distributed ML models.

In the recent year, I have mainly focused on the application of deep learning in computer vision tasks, i.e., image classification, object detection/recognition/segmentation, and so on. More specifically, I am gaining experience in CNN, RNN, R-CNNs, SSDs, YOLO, GANs as well as transfer learning using pre-trained models like VGG, MobileNet, InceptionV3, ResNet50.

Regarding my programming background, I have been working and teaching Matlab, Python, Scala, C++, and C#. I often use Python for ML tasks, APIs such as Tensorflow, Keras, Pytorch, NumPy, Pandas, scikit-learn. In addition, during my visiting research, we were developing pipelines of different ML models, using both PySpark and Scala languages (on the top of Spark Framework).

I have published several research works (listed in my CV) on developing data-driven models with the capabilities of fuzzy systems and evolutionary algorithms (EA or MOEA). My idea is that different ML and Deep Learning techniques such as SVM, BN, RF, CNN, … can be effectively integrated with EA to manage the available data and provide smarter and smoother models.

In addition to research experiences, I have been teaching at the Shahid Bahoner University of Kerman for more than six years, courses like Data Structure, Advance Programming, Network, Artificial Intelligence, Evolutionary Algorithms, and so on.

I am very passionate about Machine Learning, Deep Learning, Computer Vision, and Data Science, specifically to adapt new techniques for boosting explainability of these applications. I would be very interested in the positions related to these fields to extend and share my knowledge and believe that my past theoretical knowledge as well as my practical experiences, courses, and projects will allow me to satisfy this role, which can be enhanced in combination with the team works. I appreciate being considered for this position and hope to hear back from you soon.

Yours sincerely,
Fatemeh Aghaeipoor.