

## Questions by Blogchess – Answers by ArShah team

*Could you tell us who's behind the Arshah project? and what does "Arshah" mean?*

The author of ArShah is Kristapor Grigoryan. Kristapor is a mathematician, programmer and former chess player. There are also a few people who are supporting Kristapor on his way of creating the ArShah. The cluster is hosted in Yerevan, Armenia.

The name ArShah is a result of abbreviation/transformation of words Armenian + Shakhmat(chess in Armenian).

*How did you end up mixing chess and computers, what's your story?*

The prototype of ArShah has been created years ago. Although, we have launched <http://www.arshah.com/> and made ArShah accessible online for everyone in Summer of 2010. A huge effort and time of an individual is behind of the project. Yet, we are more excited with the future of ArShah and to what it should evolve.

Story of ArShah and our philosophy of mixing computers and chess is simple. Computers have influenced humanity much. The internet is influencing humanity and remarkably much more than standalone computer itself does. Naturally, chess is not an exception. We hope ArShah will have significant participation at that influence.

*Arshah immediately reminded me of the ChessBrain ( <http://www.chessbrain.net/> ) experiment, now unfortunately dead. Are there similarities or they're two completely different things?*

From the first glance it may seem that the two have similarities. We didn't manage to find much info on the project but it seems to us that ChessBrain was just a distributed chess engine. In our opinion only that approach is not enough for the success.

Meanwhile, ArShah is a self improving system. In that sense we think that ArShah is unique in its kind. The only similarity seems to be the idea to utilize the power of the connected computers.

*From what I understand, Arshah records positions from games played against it or from analysis and use them to improve its strength. Is this right? Could you explain something more on this?*

You got concept right. In short, ArShah memorizes everything what has happened with it while analyzing chess positions, while scanning chess games in PGN format and while playing with human opponent. In other words, ArShah is building the tree of the chess positions in a certain way. Everything is being stored. So you never need to start your analysis from the beginning or worry that results may get lost. It just gets stronger and stronger, day by day. That's what makes ArShah unique. The idea here is that a human can influence and direct the system with its analysis. It is kind of a model where a machine is learning from a human. And importantly ArShah is a self improving system which consistently evaluates new and new positions itself. We do believe that this unique approach will eventually make ArShah superior and outstanding system.

*Arshah is only an alpha version right now, how's the development going on? Are you looking for testers?*

ArShah exists for a while already. Making it available online in 2010 was the first step on popularizing it and providing a free chess analytical online service. We do realize that ArShah may be useful for GMs and chess fans as well as for chess schools as an educational purpose tool. What is important, the system is developing and improving itself day by day. Thus, keeping it up and running is already an effort on a way to develop and evolve the project.

Currently ArShah is computing ~6 million new positions per day. Our goal is to increase the number. This is the reason we are working on enhancing our hardware resources. Unfortunately we have quite limited resources and the process is not going as smooth as we would like.

We also are trying to put a little effort on allowing the internet community and chess enthusiasts recognize the project through email communication, twitter and Facebook.

With regards to testers, we are open for any kind of cooperation. We'll be glad to see testers, contributors, chess fans and others who will find analytical abilities of ArShah useful for themselves.

We already have few interested folks who are using ArShah on their own purposes.

The project is also open for financial investments. We are looking for development opportunities continuously.

*Until now, Arshah has a huge number of positions in its database ( $10^9$ ), but it's only a small fraction of all possible legal positions in chess ( $10^{43}$ ). Do you think it's possible to record them all? Would then chess be on its first step to be solved?*

This is the most complex question to answer. We do believe to computational power of the internet and we do believe that finding practical solution is easier than having all the  $10^{43}$  or whatever positions computed. We also believe that internet will and probably has already introduced effective approaches to be applied to a class of the computational problems. Meanwhile, ArShah is evolving continuously and it is absorbing human experience as well. In other words, we are optimists...

*Do you follow the computer chess scene? Is Arshah a pioneer in a new way to think about chess engines?*

Honestly, we don't have much time to intensively follow what others are doing in this field.

Meanwhile, we haven't found anything similar to ArShah till now. And yes, we do think that ArShah undoubtedly has brought a new approach to be applied on the problem. That is, combination of dynamically evolving non-homogeneous computational cluster, continuous storing of all the results of computations and possibility for human being to direct and teach the machine.

*You've probably heard about the Rybka Cluster Rental Program, and I know that the Stockfish team has access to powerful clusters for its testing. A guy on the CCC (Computer Chess Club) proposed to develop engines that work in a grid of different computers linked via TCP/IP. Do you think this is a good idea at all to work for the future?*

Certainly, involving more than one computer in the computations sounds as a very reasonable thing to do, and not only for chess, but for any other problem requiring huge computations. In some sense, ArShah cluster is just a set of individual computers with independent architectures connected through internet serving to a single goal.

We took a look at Rybka Cluster Rental Program page recently. It seems a great work is done there. We wonder how their system can evolve, can cluster be enhanced dynamically and how the results of analysis are being stored. We have also noticed that the program hasn't been launched yet and is not available for public use.

In contrast, with ArShah we afford dynamically scalable architecture and an open access.

For an example, Rybka affords a rental program with 40 processors. Once 40 individuals will launch the ArShah clients on their machines we can afford such a computational power for free. And once again, the results of the computations are always being stored with ArShah which we are not sure is the case with Rybka.

The powerful recourses mentioned by you are private and are not open for public use. We offer somewhat the same and maybe better and powerful system for free. Internet is to empower the cluster, so cluster should be open for the internet.

*Arshah is certainly an interesting idea from a scientific point of view, but how could it help the chess fan at his home? I've noticed that the Analytic Center could be easily used as an opening book, what do you think about releasing it as such in the future?*

We think that ArShah may be useful for a wide range of chess enthusiasts. It can be helpful for a novice to improve playing skills and for professional chess player to accomplish deep analysis and discover positions. It is to serve as a powerful analytical tool which is not available elsewhere. With regards to opening book, we have already released such for chess players with making ArShah available online. You can launch the client and access the whole results of the huge computations instantly. There is no need to buy something or pay for login times in Analytic Center. Although, releasing separate opening books in the future is also possible.

*Thank you so much for your time! Do you have anything more to say to our readers?*

Thank you for the interesting and well composed questions!

Hopefully, reader has learned a little more on our project with your help.

Wishing you all to love the game called Chess and play it whether with computer or human being. Best of luck to you!