**Morteza Kasravi**  

**Paper**: Generative Improvising in Shur: an approach to generative Persian traditional music

**Abstract**:  
Our goal is to aesthetically analyze Persian traditional music which is been generated by genetic algorithm technique. A survey on general music philosophy, in this special case, Persian traditional music philosophy and regarding to its unique rules such as micro tones, improvisations, semi-atonality and etc, shows that traditional optimization algorithms are not appropriate for generating Persian traditional music. Therefore through an investigation in evolutionary algorithms, we considered using genetic algorithm as our music generator system. In order to producing Fitness Function of Genetic Algorithm we utilize Persian traditional music concepts such as *Dastgāh, Gushe, Shahed tone* and etc, and Persian traditional music unique rules. Due to the extent of Radif which is the base of Persian traditional music, Shur, as one of its twelve Dastgāhs (mode) is chosen as genetic algorithm state space. We choose Shur for its capability to mark Persian traditional music tone through its unique scale and its significant role in Radif as omm'ol alhan (= mother of tones). Having Fitness Function and initializing the first generation of genetic algorithm which is derived from a transformed accidental event in real world as our system input, we move toward finding an optimum tone by reproduction of generations. In this paper the genetic algorithm system output is analyzed in presence of Persian traditional music aesthetics. The audible output of system will be attached to this paper.

**Keywords**: Persian traditional music, genetic algorithm, Radif, aesthetics, dastgāh, shur

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**Topic**: Music

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