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## Computational modeling in investigational new drug (IND) and research medications: A case study

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This paper indicates how the computational modeling can help to improve research ethics in order to study on investigational new drug (IND) application and research medications by implementation of computational model of human nervous system. In this experiment a simulation that models a Hodgkin-Huxley neuron is presented. Manipulation of ion channels as drug targets is applied on the model to change neuron dysfunction in some conditions like ion channel diseases to normal functioning. This simulation can also be used by neuroscientists to manipulate systematically various parameters in order to study of different behavior of a real neuron and research of pathological and neurological diseases like Alzheimer's, Seizures, Parkinson, and so on. Many of these models can also be applied to the investigation of response of a realistic neuron prior to incorporating it in a more complicated neural network by researchers. Such simulations is preferably required for someone who wish to gain a good level of understanding of the neuron dynamics and study on new drug and research medications, as well.

### Biography

Seyed Ali Sadegh Zadeh is a PhD candidate and a member of Artificial Intelligence and Intelligent Systems (AI&IS) in Department of Computer Science at the University of Hull. He has graduated in Master's Degree in Advanced Computing - Machine Learning, Data Mining and High-Performance Computing from University of Bristol (2013). His thesis is about "Computational Modeling for Early Detection of Mental Disorders".

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