* Funder and Projects: National Science Foundation who support science and technology and other research and development.
* Title and Reference Number: Algorithms in the Field 16-603
* Requirements: Each proposal must have at least one co-PI interested in theoretical computer science and one interested in any of the other areas typically supported by CISE. Proposals are expected to address the dissemination of both the algorithmic contributions and the resulting applications, tools, languages, compilers, libraries, architectures, systems, data, etc.
* Audience: Experts and/or practitioners in the field of computer science.

**The Preproposal**

**Objective**

Artificial intelligence (AI) is a rapidly growing field that still has many things to discover. What if AI could fully diagnose a patient accurately based on symptoms and vital signs? With a high efficiency rate, patients would be able to be diagnosed rather quickly and would speed up the clinical check-up processes. Therefore, there is less time waiting to be seen and more time getting better. Overall the major focus is could an AI machine be developed that could be implemented in robotics and could this AI machine successfully diagnose all patients.

**Methods**

Research would focus on two different sections. One would be the designing and testing of an AI system that can accurately diagnose a human based off the symptoms and the vitals. The system would also be able to process any medical imaging if it was provided. We would create a learning algorithm that we then feed in medical information and books for the AI to learn from. The algorithm would be based off concepts of deep learning as well as visual and speech recognition. This allows the AI to actively interact with the patient to accurately diagnose and prescribe. We then test the AI by using humans where we already know the diagnosis.

The second part of the research would be aimed towards creating a humanoid robot that would hold the “brain” or the learning algorithm and can interact with humans just like any other nurse or doctor. This robot must be sensitive to human touch and have heart monitors and other medical equipment embedded in the robot so it can take heart rate and other vitals. While working alongside nurses and doctors, we would make sure the robot is safe for humans and interacts just like a physician would. The project could take up to 8 months but no longer. Once I have a working prototype, I will take my work to NIH for any suggestions on how to enhance my prototype.