Project description

Are you interested in machine learning?

Machine learning is a powerful new tool for understanding data - from facial recognition to playing Go, machine learning is popping up everywhere. Machine learning is becoming increasingly popular in physics and materials science where large data sets are available.

Do you want to design materials for next-generation optoelectronics?

The performance of optoelectronic devices depends largely on spectral properties that are defined over a continuum of energies. Quantum mechanical calculations on supercomputers can predict these properties without the need to measure them in a laboratory, but the calculations come at a huge expense. One proposed solution is to train a computer to predict spectral properties without the expensive calculations. This is machine learning for spectral properties.

We are seeking one student with an interest in running state-of-the-art quantum mechanical calculations to help generate test data to train our under-development machine learning algorithm for spectral properties. This project is an opportunity to learn both machine learning basics and fundamental quantum mechanics.

Computational Electronic Structure Theory (CEST) group
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