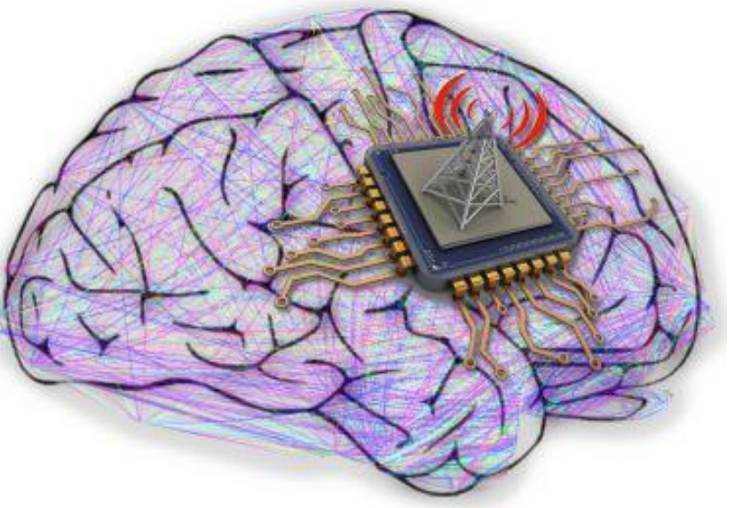
ECE421: Neural Interface Engineering



Hardware and software technologies to readout and control neural activity in the brain. Adapted to general population of EE, CS, and BioE students interested to learn principles and frontiers of neural interface engineering. **No special knowledge of neurobiology** is required.

Engineering-grounded innovation will accelerate our understanding of the brain, will impact new therapies for restoring lost neural functions, as well as will lead to neural interfaces that will augment our interaction with the world and machines.

- ❑ Noninvasive and invasive brain mapping and stimulation
- ❑ Basics of neural interfaces and neural prosthetics
- ❑ Brain data. Decoding techniques based on machine learning
- ❑ Brain interfaces based on nanotechnology and optogenetics.

Prof. Vlasov

Graduate 4 credit hours: independent project on brain data decoding or literature review.

Students testimonies: A fantastic attempt to consolidate several fields of study, very unique materials, very practical. excellent professor. Very fair grading. Learned a lot! Best class ever!