Edward Chang

Title:
The Neural Code of Speech

Abstract:
Speaking is a defining behavior of our species. I will discuss new discoveries on the functional organization and dynamics of neural populations in the ventral sensorimotor cortex that underlie speech articulation. We have recently mapped out the cortical representations of the human larynx, which appear to revise the classic somatotopic-organized homunculus map. Related studies demonstrate how motor neural populations encode the coordinated movements of the entire vocal tract during fluent speech. Finally, I will discuss how these neurobiological findings are being translated into powerful algorithms for speech decoding in the context of a communication neuroprosthesis.