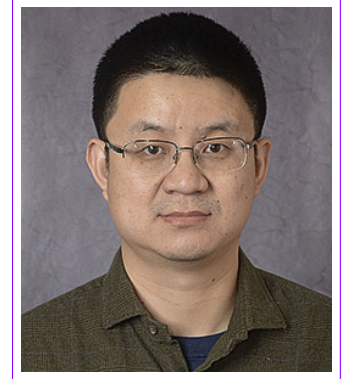*Student Seminar*

Pi Mu Epsilon
& GAMECOCK MATH CLUB

Computational Neuroscience and Artificial Intelligence

by Yi Sun, USC Professor

Yi Sun

In this talk, we briefly introduce two research areas – computational neuroscience and artificial intelligence, and their connections. In the first part, we discuss several kinds of computational models for the neuronal dynamics in brain and understand the differences between these models and their applications. In the second part, we introduce what artificial neural networks are, how they are organized, what mathematics is behind machine learning and deep neural networks. Finally, we summarize the interdisciplinary courses preparation for computational neuroscience and machine/deep learning.

Yi Sun (Ph.D., Princeton University, 2006) is a Professor of Mathematics in the College of Arts and Sciences at USC. After post-doctoral appointments at the Courant Institute of Mathematical Sciences at NYU and the Statistical and Applied Mathematical Sciences Institute in North Carolina, he joined USC in 2011 and was promoted to a tenured Associate Professor in 2015 and a Full Professor in 2021. Dr. Sun's research in applied and computational mathematics has focused on multiscale modeling and simulations with applications in biofabrication and tissue engineering, traffic and pedestrian flows, neuronal network dynamics, etc. His work has been published in high-quality journals in applied and computational mathematics and other interdisciplinary fields. He has received continuous external funding from National Science Foundation and SC EPSCoR Program. Dr. Sun teaches mathematics courses at various levels and has advised students at all levels from undergraduate to Ph.D. He is also a faculty mentor for undergraduate research in computational neuroscience in the CAS interdisciplinary Neuroscience program.

Tuesday 28th March 2023 at 6pm
LeConte 444

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