UCSF Innovation Ventures

INNOVATION VENTURES   AVAILABLE TECHNOLOGIES   CONTACT US

Request Information

Permalink

Automated Optimized Adaptive Neurostimulation

Tech ID: 34497 / UC Case 2025-184-0

VALUE PROPOSITION

The global neuromodulation and neurostimulation device market has experienced robust growth in recent years driven by raising incidences of neurological disorders, chronic pain and mental health conditions, alongside advancement in minimal invasive technologies. Despite the advances, clinicians still face significant challenges in programming adaptive neurostimulation systems due to vast number of possible parameter combinations and patient-specific variability. Current methods rely on manual trial-and-error which is time-consuming and inconsistent.

TECHNOLOGY DESCRIPTION

UCSF investigators developed an automated method for optimizing settings in multi-parameter adaptive neurostimulation, including adaptive deep brain stimulation. It addresses the complexity of programming these systems by combining modeling of stimulation and medication effects, neurostimulator internal operations, unsupervised machine learning, and Bayesian optimization. Real patient data has been used to test the system, demonstrating its ability to suggest optimal settings that clinicians can implement.

PATENT STATUS

Patent Pending

CONTACT

Hailey Zhang
hailey.zhang@ucsf.edu
tel: .

INTRODUCING UC TechAlerts
New technology matches delivered to your email at your preferred schedule
SEARCH   SAVE SEARCH
Learn More

OTHER INFORMATION

KEYWORDS

AI, machine learning, digital health, medical device, therapeutic, mental health, behavioral health, neurodegeneration

CATEGORIZED AS

▶ **Biotechnology**
　▶ Health
▶ **Computer**
　▶ Software
▶ **Medical**
　▶ Disease: Central Nervous System
　▶ Software

RELATED CASES

2025-184-0