INFERRING DYNAMIC HIDDEN GRAPH STRUCTURE IN HETEROGENEOUS CORRELATED TIME SERIES

Tech ID: 34313 / UC Case 2026-051-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

Current methods for treating nervous system disorders often rely on generalized approaches that may not optimally address the individual patient's specific pathology, leading to suboptimal outcomes. This innovation, developed by UC Berkeley researchers, provides a method to identify the most critical, or "influential," nodes within a patient's functional connectivity network derived from time-series data of an organ or organ system. The method involves obtaining multiple time-series datasets from an affected organ/system, using them to map the functional connectivity network, and then determining the most influential nodes within that network. By providing this specific and personalized information to a healthcare provider, a treatment can be prescribed that precisely targets the respective organ corresponding to these influential nodes. This personalized, data-driven approach offers a significant advantage over conventional treatments by focusing intervention on the most impactful biological targets, potentially leading to more effective and efficient patient care.

SUGGESTED USES

- To guide personalized therapeutic interventions for patients suffering from various nervous system-related disorders.
- To assist healthcare providers in identifying the most effective treatment targets within a patient’s specific pathology.
- As a prognostic tool to predict treatment response based on the identified influential nodes.
- To non-invasively map and analyze functional connectivity networks in patients with neurological conditions.

ADVANTAGES

- Offers a personalized and targeted approach to treatment, moving beyond generalized protocols.
- Identifies the most influential nodes (critical targets) in the patient's functional connectivity network.
- Leverages time-series data to provide a dynamic, specific view of the patient's condition.

CONTACT

Michael Cohen
mcohen@berkeley.edu
tel: 510-643-4218.

INVENTORS

- Subramanian, Sandya

OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
  - Bioinformatics
  - Health
- **Medical**
  - Devices
  - Diagnostics
  - Disease: Central Nervous System
  - Software
  - Therapeutics
- **Research Tools**
  - Bioinformatics
  - Screening Assays
- **Sensors & Instrumentation**
  - Medical

RELATED CASES

2026-051-0

Leads to more effective and efficient treatment prescriptions compared to existing methods.

»

Provides actionable, data-driven insights to the healthcare provider.

RELATED MATERIALS

Berkeley
UNIVERSITY OF CALIFORNIA

University of California, Berkeley Office of Technology Licensing
2150 Shattuck Avenue, Suite 510, Berkeley,CA 94704
Tel: 510.643.7201 | Fax: 510.642.4566
https://ipira.berkeley.edu/ | otl-feedback@lists.berkeley.edu