INNOVATION PARTNERSHIPS
UNIVERSITY OF MICHIGAN

iglu: Interpreting data from Continuous Glucose Monitors (CGMs)

Technology Number: 2025-200

OVERVIEW

- The iglu R package offers a comprehensive suite of tools for analyzing Continuous Glucose Monitoring (CGM) data, providing automated extraction of over 60 standardized metrics to assess glycemic control and variability. A mirror python version is available as iglu-py
- It includes built-in visualization capabilities, such as time-series and lasagna plots, and features an interactive Shiny application, making it accessible to users with varying programming expertise

BACKGROUND

The iglu package is designed to assist in the analyses of data from Continuous Glucose Monitors (CGMs). CGMs are small wearable devices that measure glucose levels continuously throughout the day, with some monitors taking measurements as often as every 5 minutes. Data from these monitors provide a detailed quantification of the variation in blood glucose levels during the course of the day, and thus CGMs play an increasing role in clinical practice.

INNOVATION

An open-source R package iglu has been developed to assist with automatic CGM metrics computation and data visualization, providing a comprehensive list of implemented CGM metrics, while also being accessible to users with no programming experience due to graphical user interface, and convenient for quantitative researchers relying on reproducible scripts for all data processing and metric calculation steps. Furthermore, iglu includes visualization tools such as lasagna plots, AGP (Ambulatory Glucose Profile) reports and time series plots, enabling users to generate publication-ready figures and conduct exploratory data analysis within the same

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Category

Digital Health
Software
Life Sciences
MOSS - Michigan Open Source Software

Inventor

Irina Gaynanova
Steve Broll
David Buchanan
John Muschelli
Nathaniel Fernandes
Elizabeth Chun

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platform. Compared to proprietary CGM software, iglu offers greater trasparency, local data control, and metric coverage. Its integration into the R and Python ecosystems also allows seamless extension to statistical modeling and machine learning workflows. It also comes with example CGM datasets and multiple vignettes, enabling users to familiarize themselves with its functionalities and interpretative capabilities.

ADDITIONAL INFORMATION

PROJECT LINKS:

- Website
- CRAN
- GitHub
- Shiny App (GUI)
- Python version

DEPARTMENT/LAB:

- Irina Gaynanova, Biostatistics

LICENSE:

- GPL 2.0