

A Brief Introduction to ISCET - The International Society for Clinical Eye Tracking

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ABSTRACT

The International Society for Clinical Eye Tracking (ISCET) serves as a global platform for promoting international consensus on open standards on clinical eye tracking. Originally formed in March 2023, ISCET was created to facilitate collaboration, knowledge exchange, and advancements in clinical eye tracking applications, with the ultimate goal of fostering interdisciplinary research and improving clinical outcomes. Through collaborative and interdisciplinary efforts, ISCET's current mission is to provide guidance on conducting eye-tracking tasks in clinical settings, unify clinicians' voices, and maintain reference datasets for normative comparisons. ISCET now has 80 members, spread across the globe. In the Europe/Africa region meeting on January 24, 2024, ISCET established subcommittees to address specific needs. This paper outlines the rationale behind ISCET's formation, its mission, objectives, ongoing initiatives, and organizational structure. Ongoing work focuses on surveying current international clinical eye tracker usage to inform standards development.

CCS CONCEPTS

• **Social and professional topics** → **Medical records.**

KEYWORDS

eye tracking, clinical eye tracking, interdisciplinary collaboration, clinical applications, standards development, normative comparisons

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1 INTRODUCTION

In recent years, the integration of eye tracking technology into clinical practice has heralded a new era of possibilities in diagnostics, interventions, and rehabilitation, providing valuable insights into human behavior, perception, and neurological function [Clark et al. 2019; Holmqvist and Andersson 2017; Holmqvist et al. 2011]. Despite its potential, the diversity of clinical applications of eye tracking and their associated heterogeneity in technical implementation, methodological approach, and analytic strategies, pose significant challenges to the development of practical, usable clinical tools [González-Vides et al. 2023; Harezlak and Kasprowski 2018; Sqalli et al. 2023].

2 THE INTERNATIONAL SOCIETY FOR CLINICAL EYE TRACKING (ISCET)

To address these challenges, and in recognition of the importance of standardized protocols and unified representation within the clinical eye-tracking community, the International Society for Clinical Eye Tracking (ISCET) was established in March 2023 [ISCET 2024].

Through collaborative efforts, ISCET seeks to advance clinical eye-tracking research and practice with the ultimate goal of improving patient care and enhancing scientific understanding. To this end, ISCET aims to serve as a global platform for collaboration and knowledge exchange, facilitating interdisciplinary research and assisting in the translation of technological advancements into clinical practice.

By fostering consensus-building and promoting collaboration among its members, ISCET aims to shape and advance the field of

clinical eye tracking. Specifically, ISCET seeks to promote international consensus on open standards, provide guidance for conducting and analyzing eye-tracking tasks, and unify clinicians' voices in the shaping of ultimate clinical application. These themes are exemplified by the recent establishment of ISCET subcommittees designed to address the challenges of establishing and promoting unified standards within the international community.

2.1 Mission and Objectives

ISCET's mission is threefold:

- (1) **Eye-Tracking Protocols:** ISCET aims to establish standardized protocols for conducting and analyzing eye tracking tasks in clinical settings, tailored to specific diagnostic conditions. These protocols, developed collaboratively by focus groups within the international eye tracking community, ensure comprehensive coverage and relevance to clinical practice. They include templates for domain-specific guidance, recognizing the varying requirements across different clinical contexts [ISCET 2024].
- (2) **Unified Representation:** ISCET acts as a unified voice for clinicians using eye tracking technology, addressing issues such as certification, fee codes, and commercialization challenges. By fostering translational pipelines and industry partnerships, ISCET aims to bridge the gap between research and industry, facilitating the dissemination of innovative practices into clinical settings [ISCET 2024].
- (3) **Reference Datasets:** ISCET is committed to maintaining reference datasets that enable normative comparisons and provide comparative function databases for specific applications and eye tracking platforms. These datasets are crucial for accurately interpreting deviations in clinical eye tracking data, enhancing the reliability and validity of clinical assessments [ISCET 2024].

2.2 Organizational Structure

ISCET's structured organization is overseen by a committee of volunteers, responsible for coordination, collaboration facilitation, and representing diverse perspectives within the international eye tracking community [ISCET 2024]. Led by a general coordinator and three regional vice presidents, this committee ensures inclusive decision-making involving the wider membership. While administrative tasks fall under its purview, broader decisions regarding ISCET's objectives and standards are collectively determined either by the wider membership or through subcommittees established during main meetings. Additionally, ISCET designates a spokesperson to maintain effective communication and representation of the organization's goals and initiatives with external stakeholders. As ISCET moves towards formalizing its membership structure, new roles such as a Membership Secretary will be introduced to bolster organizational development.

2.3 Operating Approach

ISCET has devised a roadmap and conducts regular virtual meetings across three regions, namely Asia/Australasia, Europe/Africa, and The Americas, to accommodate its global community [ISCET

2024]. These meetings serve as platforms for collective decision-making, idea sharing, and fostering broad participation among members. To address time zone disparities, ISCET rotates meeting locations among these regions. Additionally, subcommittees are formed during these meetings to tackle specific issues, allowing for parallel project execution and resource pooling. Members are encouraged to participate voluntarily in subcommittee activities and contribute to group projects. Meeting announcements are disseminated through various channels to encourage participation from individuals interested in clinical eye tracking. Moreover, all meetings, whether general, committee, or subcommittee, are recorded and made accessible on the ISCET website to promote transparency and collaboration within the community.

3 PROGRESS AND FUTURE DIRECTION

3.1 Current Membership and Synergies

ISCET currently operates without a formal fee-based membership structure; professionals interested in joining can engage with the society by participating in meetings and joining the mailing group. Membership is open to those with an interest in clinical eye tracking, with no additional prerequisites. As of February 29th, 2024, ISCET has 80 members from three regions (Asia/Australasia, Europe/Africa, and the Americas) representing a diversity of disciplines, including Ophthalmology, Neuro-ophthalmology, Optometry, Vision Rehabilitation, ENT, Neuropsychology, Neurology, Rehabilitation, Technology, and more [ISCET 2024]. This diversity supports synergies and cross-fertilization of ideas with other organizations such as those focused on vision science [e.g. VSS 2024], eye-related medicine [e.g. AAO 2024], and eye-tracking technologies [e.g. ETRA 2024].

3.2 Ongoing Work

ISCET is currently focused on (1) analyzing global clinical eye tracker usage to inform standards and priorities, in the context of prior and extant work towards establishing broad eye-tracking standards [e.g. EDQ 2019]; (2) formalizing its membership structure to bolster organizational efficiency and foster wider participation; and (3) enhancing its visibility in scientific and professional events to raise awareness and engagement. The upcoming seventh meeting (March 21, 2024) in the Americas region will delve into these topics.

4 CONCLUSION

ISCET is poised to play a crucial role in shaping the future of clinical eye tracking by establishing standardized protocols and fostering global collaboration. [ISCET 2024]. Core values include transparency, highlighted by commitments to open standards and accessible discussion; inclusivity, through organizational strategies promoting a diverse, unified, global representation; and excellence, through an emerging roadmap balancing reliable, robust application against advances at the frontier of innovation.

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