iAnn: an event sharing platform for the life sciences

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ABSTRACT

Summary: We present iAnn, an open source community-driven platform for dissemination of life science events, such as courses, conferences and workshops. iAnn allows automatic visualisation and integration of customised event reports. A central repository lies at the core of the platform: curators add submitted events, and these are subsequently accessed via web services. Thus, once an iAnn widget is incorporated into a website, it permanently shows timely relevant information as if it were native to the remote site. At the same time, announcements submitted to the repository are automatically disseminated to all portals that query the system. To facilitate the visualization of announcements, iAnn provides powerful filtering options and views, integrated in Google Maps and Google Calendar. All iAnn widgets are freely available.

Availability: http://iann.pro/iannviewer

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1 INTRODUCTION

Getting a clear overview of bioinformatics events is not a trivial task (Schneider *et al.*, 2010). Although several efforts have been made in this direction (e.g. Schneider *et al.*, 2012), ensuring that information is accurate and reliable, yet secure from malicious attack, requires curators to sift carefully through Internet content

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to identify and annotate pertinent events. In addition to collecting information from other portals, emitting sources typically create announcements about their own events. Current methods for dissemination of events in the life sciences are, however, fragmented and uncoordinated: some announcements never reach parts of their intended target audience, and many spam unintended recipients. Ideally, announcements should reach all potential event participants, without troubling those for whom they are irrelevant or inappropriate. In practice, however, announcements are typically posted simultaneously to several different sites in an attempt to reach the widest possible audience. This process is both time-consuming for those posting the announcements and bombards recipients with duplicate information about the same event from multiple sites; it also makes it difficult to change the announcement details (e.g. a deadline extension for submission of posters), as it is practically impossible to ensure that updates are propagated to every resource to which the original announcement was sent. In consequence, recipients may be misinformed or confused by announcements of the same event with contradictory dates, speaker changes and so on, which may ultimately damage the reputation of the emitting source. A central point that collects data from event organizers would address many of these problems and provide a valuable resource for life science event organizers and participants, course trainers and so on.

2 THE IANN PLATFORM

The iAnn platform provides an integrated coherent solution that coordinates efforts between announcement-emitting sources, maximizing dissemination of relevant information in an up-to-date fashion. iAnn only displays minimal information, such as title, date and location of an event; the majority of information

Fig. 1. Screenshot taken on 1 May 2013 of an iAnn filter showing 48 upcoming events at institutions associated with the GOBLET organization. iAnn, by default, shows a maximum of 300 world-wide life science events. Those at GOBLET-associated organizations are shown here integrated in Google Maps (available at http://goo.gl/LnVbw); an event hosted at The Genome Analysis Centre is clicked, displaying minimal information and a link to the source

must be gained from the event site itself, which should be accurately maintained by the emitter. iAnn's philosophy is that *an event should be curated only once*. The filtering functionality of iAnn allows reported events to be tailored to better fit a given target audience.

To accomplish our philosophy, iAnn provides (i) a common gateway for entering and annotating announcement information (the interface to annotate announcements is only accessible to authorised curators); (ii) a centralized repository of annotated data; and (iii) a suite of Web services and widgets that can be embedded in external websites, and display pre-programmed filtered lists of announcements, with no need for manual input from the external website maintainers. Features like this are already available in news portals, such as Research Gate (http://www.researchgate.net/) or Lanyrd (http://lanyrd.com/), including the use of submission forms for events and community curation. Such portals, however, do not provide the richness of different filtering options, the complete access to all events via Web services, or the ready-made integration iAnn offers through Google Maps and Google Calendar. iAnn is thus unique in that it provides easy integration and access to event data either through Web services or widgets. These widgets are specifically designed to work with some of the most popular content-management systems, including Drupal, Joomla and WordPress. The functionality currently provided includes (i) a list view, showing details of the name of the event, the date and the institution submitting the event; (ii) a map view, integrated in Google Maps, displaying all relevant events as clickable pivots (once clicked, the corresponding event information is released, as illustrated in Fig. 1), with a link to the original event or course page; and (iii) a calendar view, where iAnn-filtered events can also be viewed in Google Calendar.

Events are never deleted from the system; widgets by default hide out-of-date events, although users can disable this filter and see all deposited events. By 1 May 2013, the total number of deposited events in the iAnn registry since the beginning amounted to 1273. Curation of events follows a two-step process, with one curator recording the event information and a different one validating the information entered before making it public to the registry. A robust monitoring procedure is also in place that checks potential failures of iAnn services. This is done through a daemon program that has the capacity to automatically reboot the service should it go down.

3 IANN COMMUNITY

Announcement data can be posted via the iAnn event-reporting form (*http://iann.pro/node/12*) or can be directly emailed to *events@iann.pro*. Once received, iAnn curators review and annotate the announcement if the event does not exist in the central repository. Posts are welcomed by any individual or organization involved in the life sciences. The iAnn project officially started in summer of 2011 and has since garnered strong support. Working with diverse organizations has given us first-hand experience with community-driven input from the fields of bioinformatics, computational biology, biocuration and proteomics. As part of this community-wide support, we are developing a standard sharing protocol for announcement exchange. Future versions

of iAnn will thus include an agreed exchange format, an ontology and a minimum specification for scientific announcements.

REFERENCES

Schneider,M.V. *et al.* (2010) Bioinformatics training: a review of challenges, actions and support requirements. *Brief. Bioinform*., **11**, 544–551.

Schneider,M.V. *et al.* (2012) Bioinformatics Training Network (BTN): a community resource for bioinformatics trainers. *Brief. Bioinform*., **13**, 383–389.