

Visual Analytics of Scientific Data in Immersive Environments via a Semantic Definition of the Content and the Context

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ABSTRACT

Bringing together, in a unique immersive environments, the visualisation and the analysis of scientific and complex data requires a thorough approach in order to fulfill scientists expectations. This approach needs to consider the highly heterogeneous nature of data, the dynamic interactions between the user and the data (IHM) and finally the amount of data involved. Whereas small and static scientific datasets can be quickly deciphered thanks to standard immersive tools, bigger and dynamic datasets overcome the analytical capacity of these tools and requires an efficient platform to manipulate the data they expose. We raise through the example of the structural biology field the need for an approach based on a high-level definition of the content (scientific data) and the context (immersive environments and interfaces) in order to setup a platform able to present to the user a dynamic and intelligent representation of both his data and his ways to interact with them. We called this approach the virtual analytics where a semantic definition of all the concepts, abstract and concrete, manipulated in the environments allows for an adaptive and interactive experience of visualisation and analysis.

Index Terms: K.6.1 [Management of Computing and Information Systems]: Project and People Management—Life Cycle; K.7.m [The Computing Profession]: Miscellaneous—Ethics

1 INTRODUCTION

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2 EXPOSITION

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$$\sum_{j=1}^z j = \frac{z(z+1)}{2} \quad (1)$$

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Table 1: Vis Paper Acceptance Rate

Year	Submitted	Accepted	Accepted (%)
1994	91	41	45.1
1995	102	41	40.2
1996	101	43	42.6
1997	117	44	37.6
1998	118	50	42.4
1999	129	47	36.4
2000	151	52	34.4
2001	152	51	33.6
2002	172	58	33.7
2003	192	63	32.8
2004	167	46	27.6
2005	268	88	32.8
2006	228	63	27.6

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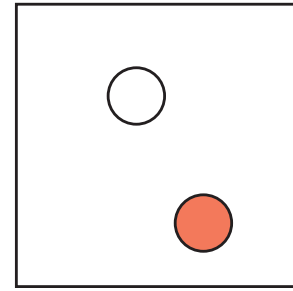


Figure 1: Sample illustration.

2.1 Mezcal Head

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¹Footnotes appear at the bottom of the column

3 CONCLUSION

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