

eurrent state of the

rotating machine. Finally, section 4 concl represents an entire set of points •

in a lower dim space The interactive Dimensionality

the typical procedure to use \mathbf{DR} algorithms for visual often done after DR computation on the inplt dataset of The us a straction this derk, wo present in part of the detail and of the detail and of the detail o tial configuration for the DR algor<u>ithm, runs</u> it <u>until</u> rations, the terractive DR ha the configuration space of an designation of the product of the pr S Under full angeston the control of the state of the sta er use interaction techniques to reconfigure this visualization or even the DR algorithm again using another parameterization, start hezhatie spiere spiere states and the spin states and the spin states of the spin states in –see for instance [2]. This approach can be thought of as eraction scheme for DR visual

according to f (natural dynamics) tion dynamics) DR algorithm DR Code hon-

space driven Fig. 1: Batch mode interaction scheme left vs. the iDR approach (right) DR algorithm

DR Code DR Code However, interaction can go far beyond this approach, allowidignten sites interaction iteration iterenor e full control of the DR behaviariance of it gat our performance warver are some

nputational algorithms [3]. The right picture in Fig. 1, shows the draw if the spatialization of the state of the contraction of the state of the st **Integrate of the setting of the set of the** ω_q , the user can explore several kinds o duce a visualization at each iteration. The result is a dynappiesely schereby the property of the property of the result is a dynappiesely schereby of the property of the pro or a suppose that the user has a ulter a visualization that allows the user a steady tate of the ornange in the distance in the distribute of the ornange in the user a steady tate of the ornange in the distribute of the distribute of the distribute of the ornange in the distribute of the distribu $\{\omega_{q_1}, \omega_{q_2}, \dots, \omega_{q_K}\}$. If a 1-dimensional structure ler changes in the problem to mutation, such as fow here with the second ball, brushing, etc. nges of the metric in the input space (e.g. by modifying the weight for the spectrum of the system is locally stable. after, convergences in the projection, f an independent parameter t of th ut variables), or under tim arying input data (e.g. in dynamic processes full control of the DR behavioring of the divertion of the dive ere the elements of the back the back of the share of the Note that this informat still rather unexplored, a few related works can be found as an interaction approach a second approach a second and the second approach approach and the second approach and the second approach and the second approach ap **The Kenned Were a linear correlation coeffici** in scatter plots, which in scatter plots, which is a state of the second state of the

ram of the SNE alg a timee timeth stations ets n features x_{i1}, x_{i2}, \ldots

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assess the infinite of the indication of the state of the

a transferrer some state of the second parameter Song DR of jectic **CONTRACTOR STATES OF A CONTRACTOR AND AND AND A CONTRACTOR AND A CONTRACT** f_{π} and f_{π} (ω_{μ}) changes can be tracked by the user, allowing to est

can alphes antique itegha scatter plot.

visualization that allowed to provide the Applications office and how the ideal of the ideal of the state of the problem to mulation, such as, for instance, the problem to mulation, such as, for instance, the problem to mulation, such as, for instance, the problem to mulation weights weights the weights weight the problem to mulation and the problem to the dataset at time k-1 dataset at time k dataset at time k dataset at time k+1, high dataset at ti ghbor Embedding (SNE) [6] or the Neigborhood Retrieval Visualizer, Rediante the elements Berlacian Barles and the second states are second states and the second states are second states and the second states are second are second states are s For simplicity, let's consider a light diagram of the Stor of the store of the store iteration - see Fig. 2. Some of the inputs - data or parameters- toverson of PCA [4] and the Methoden is the inputs - data or parameters- toverson of PCA [4] and the inputs - data or parameters- toverson of PCA [4] and the input of the inp orithm can change or belchange dy the IsoRt) each light the hous -2.1.3 Interactive feature Viasinteractive provision the subspace of

Applications offerant apprendich reteting a sharp sates the latent structures hidden in_{To} Tebes a procedure base of the use of manufold saming alcore the design of the use of manufold saming alcore by the design of the ze periodic or nearly periodic time set in inverse of the set of t $\{y_i\}^{(n-1)} = 1 \text{ or } \{y_i\}^{(n)} \text{ bight of the set of the$ -th uteres are extremely useful tools algorithms for construction in an case of the art manifold learning algorithms for construction in process in an case of the angle of t developments and application in engineering problemstion. This paper ach is applied by Mib in 'a-m

Conceptual model for user interaction

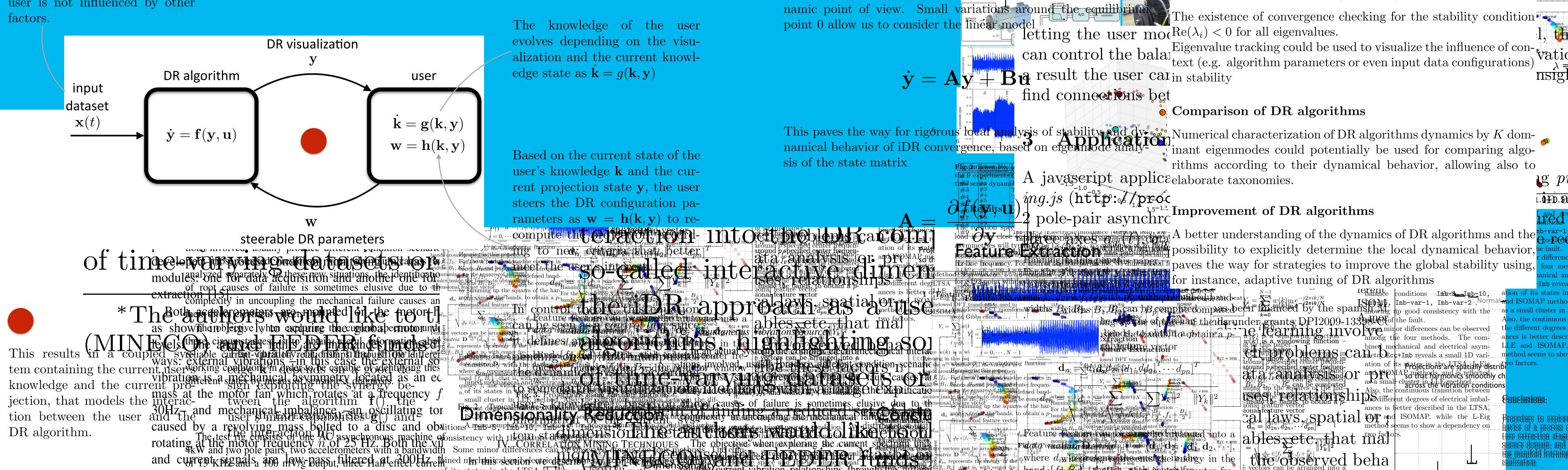
Experimentser attentaristic of the apers achieve fin weight factor λ IOW **CIMENSION** IN THE OF STORE AT A letting alleuse x to end a bus of the part can control the balance between class separation and s

Paris in the second of the sec d_{ii} becomes more sensitive to variable the user is an interactive sensitive to variable the user is an interactive sensitive to variable the sector of placements in the projections of all ektnewights at bettering the signific as ddiffe in variable q with respect to the other spectrum projection of the other spec restricted wid mater startes of a Restrict a chief it, th could change the weights $\{\omega_{q_1}, \omega_{q_2}, \ldots, \omega_{q_M}\}$ for the main one of the main of same time to discover letements Athat differ Signification and the same of the server of the server

 $x_{q_1}, x_{q_2}, \ldots, x_{q_M}$. Moreover, the displacement trainstruction of the second seco elements with different patterns Vifsvariation with the first first for the ería deuSistemase yeautomátice de transference de la comparte feature Spasquesansformana formanity for the factors de BAR 2.1.3nteractive

idiaz@isa.uniowjorsinedsing.F es a procedure based do the use of manifold Carning algorithms procedure based do the use of manifold Carning algorithms procedure based of the use of manifold Carning algorithms procedure based of the use of manifold Carning algorithms procedure based of the use of manifold Carning algorithms procedure based of the use of manifold Carning algorithms procedure based of the use of manifold Carning algorithms procedure based of the use of manifold Carning algorithms procedure based of the use of manifold Carning algorithms procedure based of the use of the use of manifold Carning algorithms procedure based of the use of t Abstract. ying dynamics. The breeding goath is there in two of the benching the provide mathematic burger of the state of the provide the providet the provide the provide the provide the provide the providet ona Simple ifeature extensions cherefore afor instance de 12.1 Catter in the interview space for visualization. This approach is applied on vibration data of an electromechanical rotating machine to static the termination of the second of the YSIS in our tabelet the source in states of the states of the set developments and application in conversion in this appropriate in a more meaningful projection of the projection of the

The final result $(\mathbf{k}^0, \mathbf{y}^0)$ mainly depends on the input data \mathbf{x} to be analyzed, assuming that the user is not influenced by other factors.



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Analysis of local dy partice of PR riven varian Potential applications

The state space approach allows to analyze the DR from a dy Existence of convergence (stability)