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Inversion-free-, Inversion-, and Pseudo-inversion-based Near-singular System Solvers: Which One to Use

S.K. Sen and Gholam Ali Shaykhian

Abstract

Four methods — three most widely used Matlab methods and one from optimal iterative schemes - are considered for their performance evaluation for a near-singular linear system. Their scope in producing a quality solution of the system subject to the precision of the computer employed and the degree of singularity of the system is discussed preceding our recommendation.

Keywords: Inversion-free solution, minimum norm least squares inverse, near-singular linear system, pruning, true inverse.

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Introducing Intelligent Control Paradigms to Potential Researchers

R. Sathya and G.T. Manohar

Abstract

Abstract Intelligent control (IC) is an evolving interdisciplinary area depicting artificially intelligent control. It encompasses several subjects such as artificial intelligence, computer science, neural networks, fuzzy control, genetic algorithms, expert systems, and hybrid systems. It aims at robustness and tractability in uncertain environment. Artificial intelligence provides knowledge representation ideas and methodologies. The IC methodologies are increasingly being employed in several application areas such as robotics, communications, manufacturing, traffic control, and automation. This article provides a very brief overview of some IC models and is specifically meant as an introduction to readers who intend to get acquainted with this relatively recent area and eventually desire to do innovative work either in an industry or an academic environment.

Keywords: Fuzzy Logic Control, Intelligent Control, Neural Network Control.

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Bayesian Model Comparison in General Relativity and Cosmology

Moncy V. John

Abstract

Bayesian model comparison is a cogent plausibility assessment technique specially adapted to learning processes. In this paper we attempt to verify how string the evidences obtained for the general theory of relativity and some currently favoured cosmological models using this technique. Our purpose is to demonstrate that many desirable features of physical theories, which are normally adapted as common sense notions, can be put in quantitative terms using this approach. Based on some classic environmental data, we find that in the case of gravity, general relativity passes the Bayesian tests by huge margins. We also briefly review some Bayesian analysis already done in cosmology, which show that the dark energy are still in their infancy.

Keywords: General relativity, observational tests, Bayesian model comparison.

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Mixed Ligand Complexes of Vanadium (III) with Biguanides

Preeti Mangala

Abstract

The aim of this work is to study the formation of mixed ligand complexes of Vanadium (III) with (N – N) biguanides and (N – N – N – N) ethylenedibiguanide. Complexes of stoichiometry $[VL_2(NCS)_2]X$ ($L = \text{BigH}^+$, $(\text{Me})_2\text{BigH}^+$ or ϕBigH^+ and $X = \text{NCS}^-$, I^- or ClO_4^-) have been isolated in the solid state by the interaction of the appropriate amount of ligand in their base form with methanolic solution of $(\text{NH}_4)_3[\text{V}(\text{NCS})_6]4\text{H}_2\text{O}$ under pure nitrogen atmosphere. The quadridentate ethylenedibiguanide also reacts with the methanolic solution of $(\text{NH}_4)_3[\text{V}(\text{NCS})_6]4\text{H}_2\text{O}$ at reflux temperature forming very stable complex of composition $[\text{Ven}(\text{BigH}^+)_2(\text{NCS})_2]X$ ($X = \text{NCS}^-$, I^- or ClO_4^-). The complexes are characterized by elemental analysis, magnetic moments, molar conductance, electronic reflectance and IR spectra.

Keywords: Coordination Chemistry, mixed ligand, six coordinated Vanadium (III), nearly O_h symmetry.

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Metamorphic Progression in *Polypedates Maculatues* During Captive Culture

Josephine Chandy and Katre Shakuntala

Abstract

Amongst the vertebrates, being cold blooded and having very sensitive skins, amphibians are excellent indicators of environmental conditions, which is being reflected in their life-history patterns. Hitherto, a tropical species, the Indian tree frog *Polypedates maculatus* has been studied under captivity in the laboratory, to decipher the species specific metamorphic pattern, in order to draw wealth of information on the developmental biology of Indian anurans and also to compare the metamorphic pattern with their counterparts studied in the wild. *Polypedates maculatus* is a typical tree frog of moist deciduous forest, which has become semi-urban especially in cities with extensive gardens. Being a seasonal breeder, the frog breeds in the monsoon season and the free swimming tadpoles in early premetamorphic phase were collected from the rain fed waters of the open fields in Virajpet, Kodagu District and reared in the laboratory till they metamorphosed and the time interval of development from one stage to another was recorded. The present study also analyses the variations among the six morphological parameters of the different developmental stages from free-swimming premetamorphic tadpoles to newly emerged froglets, in order to trace the metamorphic progression under captivity. The average period of development from early premetamorphic period through metamorphosis was approximately 42 days, (6 weeks) in the laboratory, which was more or less comparable with the duration of their counterparts in natural habitats, as studied previously. While it shares the same habitat with many other anurans like *Rana curtipes* known for its "neotenic"? giant tadpoles, with its longer larval duration of 9-11 months, the larval duration of *polypedates maculatus* was much shorter, the life-history pattern being species-specific and this may be taken as an index of its genetic adaptation.

Keywords: Anura; Frog; *Polypedates maculatus*; Life history; Metamorphic progression.

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A Study on Sperm Cell Motility Inducement of Buffalo Bull Semen (*Bubalus Bubalis*)

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Abstract

Caffeine is an alkaloid, which is a cyclic nucleotide phosphodiesterase inhibitor is employed as a motility stimulating agent with buffalo bull semen; The motility of the sperm cells are enhanced by caffeine, which happens due to strong inhibitor of phosphodiesterase by caffeine. Phosphodiesterase is an enzyme, which avoids the sugar accumulation by destroying the cAMP inside the cells. In this study it was found that caffeine enhances the sperm cell motility in a larger range and was found best suited as a motility enhancer especially in reconstitution situations.

Keywords: Caffeine, TEG, Motility %, Motility Index, Post Thaw Motility.

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Psychological Effects of Counselling Tsunami Affected Children*

Kuriakose Augustine and Sudha Bhogle

Abstract

The study examines the experience of counselors in counseling children and adolescents after the tsunami in South East Asia. Twenty-one counselors (12 female and 9 male) with an average age of 25.2 years with an experience of counseling children in tsunami hit areas ranging from 3 months 2 weeks to 10 months 3 weeks were interviewed. The psychological effects on the counselors with regard to stress experienced, the coping methods adopted, future orientation towards counseling, and the training needs were identified. Content analysis of the data indicated biologically, psychologically and behaviourally based experiences of stress in the counselors. Remedial and protective strategies to cope with stress were also indicated. 100% of the respondents reported a positive future orientation towards counseling. The training needs identified include specialized skills for counseling children, strategies of counseling and training in specified areas of counseling.

Keywords: Psychological effects, disaster-affected children, Compassion fatigues, coping strategies, personal resources, training needs.

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Feminist Criticism: Examining the 'Personal is Political'

K. Vanaja Malathy

Abstract

The textual focus of this article is to find how literary representations of women are gendered in biographical works. Literature as a cultural practice involves in producing meanings and values that lock women in inequality. Therefore a need is felt to explore into the perception of reality the great books of our language offer us. This article aims to place biography within the cultural context and not a personal portrait of itself. It also revolves around the seminal idea of 'personal is political' and recognizes that 'politics' is not the sole preserve of professionals called politicians. On the contrary 'everything is politics', especially those 'truths' which great literature is said to embody and which still get labeled 'universal' though less often 'eternal' than used to be the case. Politics in this wider sense means 'power' or rather 'power relations': who does what to whom and in whose interests.

Keywords: Gynocriticism, 'personal is politica'.

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360° Feedback Technique – Panacea for all Appraisal Problems

Lalitha Raman

Abstract

The biggest challenge for any HR manager is to attract talented people and retaining them in the organization. Many personnel activities, particularly training and development, pay rises, promotions and transfers, are based on one criterion i.e., actual or potential performance of an employee. HR specialists have evolved systematic methods and techniques for objective assessment of an employee's performance. Performance appraisals must convey to employees how well they have performed on established goals mutually set between the employee and the superior.

Keywords: Performance appraisal, stakeholders, training and development, behavioral changes.

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