Peer Evaluation System

M.Tech Project
Under
Prof. D.B.Phatak
by
Pawan Kumar Singh
Paper 1

Title: University of California Peer Review System and Post-tenure Evaluation
Author: Ellen Switkes
Journal/Publisher: Innovative Higher Education [54], Volume 24, Issue 1
Year: 01-09-1999
Publisher: Kluwer Academic Publishers
Abstract: In this paper faculty member of university of california are peer reviewed by department colleagueas, campus faculty members, and dean. It increases workload in one side but result in maintaining the quality of faculty members. This schedule is repeated in 3 to 4 years.

Paper 2

Title: Evaluation of Scalable Application-level Multicast Built Using Peer-to-Peer Overlays [9]
Author: Miguel Castro, Michael B. Jones, Anne-Marie Kermarrec, Antony Rowstron, Marvin Theimer, Helen Wang and Alec Wolman
Year: 2003
Abstract: In this paper some peer-to-peer overlay networks like CAN, PASTRY, CHORD, TAPESTRY are discussed and what approach do they follow while implementing these overlay networks. Then the comparison between CAN style and PASTRY style are done at the time of some multicasting.

Paper 3

Title: Peer evaluation: 'I am not the teacher' [49]
Author: Sima Sengupta
Journal/Publication: ELT Journal, volume 52
Year: 1998
Abstract: In this paper secondary class students of Hong Kong are investigated in the sense of learners are viewed as teachers as well as reader of what
ever they had written. It is mainly a case study to swap the role of student as teacher as well as reader of own compositions.

Paper 4

Title: Bibster–a semantics-based bibliographic Peer-to-Peer system [26]
Author: Peter Haase, Bjørn Schnizler, Jeen Broekstra, Marc Ehrig, Frank van o Harmelen, Maarten Menken, Peter Mika, Michal Plechawski, Pawel Pyszłak, Ronny Siebes, Steffen Staab, Christoph Tempich
Year: 2004
Abstract: This paper describes about a peer-to-peer system named ”bibster” which is shared among all researchers and the system can help them in data presentation, query formation, result presentation at the time to collaborate all researchers..

Paper 5

Title: Nepotism and sexism in peer-review [58]
Author: Christine Wenners and Agnes Wold
Journal/Publication: Nature publications group, volume 387
Year: 2001
Abstract: In this paper how nepotism and sexism affect the peer evaluation system is discussed.

Paper 6

Title: Effects of Rotated Leadership and Peer Evaluation on the Functioning and Effectiveness of Self-Managed Teams: a Quasi-Experiment [18]
Author: Amir Erez, Jeffrey A. Lepine, Heather Elms
Journal/Publication: Personnel Psychology volume 55
Year: 2002
Abstract: Some 38 different undergraduate self managed team were experimented by:
1. Inspite of external evaluation they were peer evaluated which result in
higher cooperation, voice, performance etc.
2. The rotation of leadership within group also result in higher cooperation, voice, performance etc.

Paper 7

Title: Self and Peer Evaluation of Writing in the Interactive ESL Classroom: An Exploratory Study
Author: Dennie Rothschild, Felicia Klingenberg
Journal/Publication: TESL Canada Journal, Volume 8
Year: 1990
Abstract: In this paper investigation of writing in a general skills ESL class is done by self and peer evaluation where three measurement are used:
1. Strength of students
2. Weaknesses of students
3. Grade on the two basis: 1) Response and feedback to a writer’s efforts. 2) Student’s Growth as a writer

Paper 8

Title: Predicting change in academic achievement: a model of peer experiences and self-system processes
Author: Frédric Guay, Michel Boivin, Ernest V. E. Hodges
Journal/Publication: Journal of Educational Psychology, Vol 91(1)
Year: 1999
Abstract: A model of peer evaluation is used to predict the change in academic achievements of school children. In it the result of peer assessment showed a feeling of connectedness among children which affects definition of competence among children which is hypothesized in terms of changement in academic achievements.

Paper 9

Title: Tracing a large-scale Peer to Peer System: an hour in the life of Gnutella
Author: Evangelos P. Markatos
Journal/Publication: In 2nd IEEE/ACM International Symposium on Cluster Computing and the Grid
Year: 2002
Abstract: In this paper a large scale peer-to-peer system named "Gnutella" is revised in terms of traffic patterns. In it we focus on the type of queries submitted by peers and their responses are tracked and analyzed to control traffic.

Paper 10

Title: The Peer Sampling Service: Experimental Evaluation of Unstructured Gossip-Based Implementations [30]
Author: Mark Jelasity, Rachid Guerraoui, a Anne-Marie Kermarrec, and Maarten van Steen
Journal/Publication: In Middleware 04: Proceedings of the 5th ACM/IFIP/USENIX international conference on Middleware, Springer-Verlag
Year: 2004
Abstract: In this paper how to improve the peer sampling service in gossip based communication model which is used in large scale distributed system is analyzed because that is the soul of the system.

Paper 11

Title: The potential and problems of peer evaluation in higher education and research [13]
Author: Hans-Dieter Daniel, Sandra Mittag and Lutz Bornmann
Journal/Publication: Portland Press Ltd
Year: 2007
Abstract: In this paper how peer evaluation help in enhancing the quality of research and study is discussed. Moreover the problem while performing it is also mentioned. The basis for this is that a specialist in one field could be a best gate keeper for the quality control of that field.
Paper 12

Title: FACULTY EVALUATION: Reliability of Peer Assessments of Research, Teaching, and Service [45]
Author: Lawrence S. Root
Journal/Publication: Research in Higher Education Volume 26, Issue 1, Kluwer Academic Publishers
Year: 1987
Abstract: In this paper ratings on three areas: research, teaching, service is rated for each faculty member in a group of 6 person. Then we have a no. of ratings according to some restriction, some rules and then decide whether to increase the salary of a faculty or not.

Paper 13

Title: Mapping the Gnutella Network: Properties of Large-Scale Peer-to-Peer Systems and Implications for System Design [44]
Author: Matei Ripeanu, Ian Foster, Adriana Iamnitchi
Journal/Publication: IEEE Internet Computing Journal, volume 6
Year: 2002
Abstract: In this paper we are extracting the topology graph of existing peer-to-peer application named "Gnutella" network to analyze the traffic scenario at application level in the hope of some improvement so that reliability, scalability, performance of the system could be increased.

Paper 14

Title: Improving the Effectiveness of Students in Groups With a Centralized Peer Evaluation System [7]
Author: STEPHANE BRUTUS, MAGDA B. L. DONIA
Year: 2010
Abstract: We have done an experiment regarding the effectiveness of students in group by implementing a centralized electronic web based system and with the result it was clear that it can be used for other purpose where we need anonymity in the final feedback or result.
Paper 15

**Title:** A Churn-Resistant Peer-to-Peer Web Caching System [35]
**Author:** Prakash Linga, Indranil Gupta, Ken Birman
**Journal/Publication:** ACM
**Year:** 2003
**Abstract:** To make our system more reliable when system is web based, we need to think about denial of service attack at the time of constant arrival and failure of participant on the peer-to-peer system. One such type of attack called "Churn", in this paper we are trying to resist the effect of this attack by caching.

Paper 16

**Title:** Can There Be a Single System for Peer Assessment of Professionalism among Medical Students? A Multi-Institutional Study [3]
**Author:** Arnold L, Shue CK, Kalishman S, Prislin M, Pohl C, Pohl H, Stern DT.
**Journal/Publication:** Acad Med. 2007 Jun;82(6):578-86. PMID 17525545 [PubMed - indexed for MEDLINE]
**Year:** 2007
**Abstract:** This paper is a type of case study to make a common peer assessment system for all the medical students from different colleges. They had done some research on the perspective of students from different colleges, different year level students for the properties that a peer assessment system should have to see the uniformity in the proposed system.

Paper 17

**Title:** Comparative analysis of a set of bibliometric indicators and central peer review criteria Evaluation of condensed matter physics in the Netherlands [43]
**Author:** E.J. Rinia, Th.N. van Leeuwen, H.G. van Vuren, A.F.J. van Raan
**Journal/Publication:** Research Policy volume 27
**Year:** 1998
**Abstract:** A correlation between the bibliometric indicator and the outcomes of the peer expert’s review system is analyzed which result in a breakdown
when we keep on increasing the criterion for the peer assessment. The final result shows a strong correlation between bibliometric of students involved in basic science than students involved in applied science.

**Paper 18**

**Title:** Guidelines for authors and peer reviewers of economic submissions to the BMJ [16]

**Author:** M F Drummond, T 0 Jefferson

**Journal/Publication:** BMJ

**Year:** 1996

**Abstract:** In this paper guidelines while economic evaluation of healthcare interventions are given so that the quality of peer evaluation as well as the research work could be increased.

**Paper 19**

**Title:** Developing science activities through a networked peer assessment system [55]

**Author:** Chin-Chung Tsaia, Sunny S.J. Lina, Shyan-Ming Yuan

**Journal/Publication:** Comput. Educ., Elsevier Science Ltd

**Year:** 2002

**Abstract:** To improve the quality of scientific activities 24 teachers in Taiwan were gone through 3 rounds of networked peer evaluation system. This for peer evaluation not only helps evaluation scheme but also the quality of evaluator in his own work or research while giving feedback to others.

**Paper 20**

**Title:** Scaffolded writing and rewriting in the discipline: A web-based reciprocal peer review system [12]

**Author:** Kwangsu Cho, Christian D. Schunn

**Journal/Publication:** Comput. Educ., Elsevier Science Ltd

**Year:** 2007
Abstract: A web based system called "SWoRD(scaffolded writing and rewriting in the discipline)" is discussed. A large class which have too much content and writing skills matters, this system is very useful in reviewing, again writing and the back reviewing to improve the quality of writing.

Paper 21

Title: Push-to-Peer Video-on-Demand system: design and evaluation [52]  
Author: Kyoungwon Suh, Christophe Diot, James F. Kurose, Laurent Massoulie, Christoph Neumann, Don Towsley, Matteo Varvello  
Journal/Publication: IEEE Journal of Selected Areas in Communications, Vol.25  
Year: 2007  
Abstract: Inspite of peer-to-peer approach a new approach called push-to-peer is mentioned where content is pushed to peer instead of waiting for the peers to get the content to decrease network traffic.

Paper 22

Title: Electronic peer review and peer grading in computer-science courses [20]  
Author: Edward F. Gehringer  
Journal/Publication: ACM  
Year: 2001  
Abstract: A peer grader system is made for reviewing the submission of eight computer science courses. It contains six phases from sign up to final result. More over this system has some unique quality of the ability to submit arbitrary sets of Web pages for review.

Paper 23

Title: Trust and Reputation Model in Peer-to-Peer Networks [57]  
Author: Yao Wang, Julita Vassileva  
Journal/Publication: Stanford InfoLab  
Year: 2003  
Abstract: A bayesian network based trust model is represented to maintain
the trust among the peers and the assessment work they have done. In it a peer can represent his trust and update his trust on the peers in network because peers have different different needs in different situation so it is necessary to have trust on the evaluating peer.

**Paper 24**

**Title:** A Peer-review Approach for Ontology Evaluation [53]

**Author:** Kaustubh Supekar, M.S

**Journal/Publication:** Stanford University School of Medicine

**Year:** 2005

**Abstract:** There are no operational quantitative or qualitative methodologies to assess the quality of ontology content. So peer review of such ontology will help knowledge engineers to use the existing solutions than starting from the scratch. This paper discusses about ontology evaluation.

**Paper 25**

**Title:** A Peer-To-Peer Video-On-Demand System Using Multiple Description Coding And Server Diversity [59]

**Author:** Xiaofeng Xu, Yao Wang, Shivendra S. Panwar, Keith W. Ross

**Journal/Publication:** Image Processing, 2004. ICIP ’04. 2004 International Conference on (Volume:3 )

**Year:** 2004

**Abstract:** In this paper video streaming is done not by a dedicated server while a set of ordinary system work as servers and for a video demand each video is coded into multiple descriptions, which are distributed over multiple peers to decrease the peer down time.

**Paper 26**

**Title:** Towards Evaluation of Peer-to-Peer-based Distributed Information Management Systems [17]

**Author:** Marc Ehrig, Christoph Schmitz, Steffen Staab, Julien Tane, Christoph Tempich
**Journal/Publication:** Agent-mediated Knowledge Management - AMKM-2003, AAAI Spring Symposium 2003, Stanford  
**Year:** 2004  
**Abstract:** Inspite of distributed knowledgebase management system, peer-to-peer knowledge management systems are providing technical foundation for it but what would be the value of these system’s evaluation criterion, in this paper a evaluation function which provide enough criterion is described.

**Paper 27**

**Title:** Evaluation and optimization of a peer-to-peer video-on-demand system [11]  
**Author:** Bin Cheng, Xiuzheng Liu, Zheng Zhang, Hai Jin, Lex Stein, Xiaofei Liao  
**Journal/Publication:** J. Syst. Archit., Elsevier North-Holland, Inc.  
**Year:** 2008  
**Abstract:** Video on demand is increasingly being popular among internet users but due to load on servers due to video on demand, what and how peer to peer system can help in reducing the load as well as users satisfaction is discussed in this paper.

**Paper 28**

**Title:** Citation Ranking Versus Peer Evaluation of Senior Faculty Research Performance: A Case Study of Kurdish Scholarship [39]  
**Author:** Lokman I. Meho, Diane H. Sonnenwald  
**Journal/Publication:** Journal of the American Society for Information Science, volume 51  
**Year:** 2000  
**Abstract:** How citation ranking is corelated with the peer evaluation of assessment of senior research performance. Normally no of referees for that research paper is counted as peer evaluation ranking but in this paper they have added two more thing citation content analysis, book review content analysis.
Paper 29

Title: Publication Prejudices: An Experimental Study of Confirmatory Bias in the Peer Review System [37]
Author: Michael J. Mahoney
Journal/Publication: Cognitive Therapy and Research, Volume V1
Year: 1977
Abstract: Confirmatory bias is the tendency to emphasize and believe experiences which support one’s views and to ignore or discredit those which do not. The effects of this tendency have been repeatedly documented in clinical research. However, its ramifications for the behavior of scientists have yet to be adequately explored. For example, although publication is a critical element in determining the contribution and impact of scientific findings, little research attention has been devoted to the variables operative in journal review policies. In the present study, 75 journal reviewers were asked to referee manuscripts which described identical experimental procedures but which reported positive, negative, mixed, or no results. In addition to showing poor interrater agreement, reviewers were strongly biased against manuscripts which reported results contrary to their theoretical perspective. The implications of these findings for epistemology and the peer review system are briefly addressed.

Paper 30

Title: Managing Trust in a Peer-2-Peer Information System [1]
Author: Karl Aberer, Zoran Despotovic
Journal/Publication: Proceedings of the tenth international Conference on Information and Knowledge Management (CIKM01)
Year: 2001
Abstract: Managing trust is a problem of particular importance in peer-to-peer environments where one frequently encounters unknown agents. Existing methods for trust management, that are based on reputation, focus on the semantic properties of the trust model. They do not scale as they either rely on a central database or require to maintain global knowledge at each agent to provide data on earlier interactions. In this paper we present an approach that addresses the problem of reputation-based trust management.
at both the data management and the semantic level. We employ at both levels scalable data structures and algorithms that require no central control and allow to assess trust with other agents. Thus the method can be implemented in a peer-to-peer environment and scales well for very large numbers of participants. We expect that scalable methods for trust management are an important factor, if fully decentralized peer-to-peer systems should become the platform for more serious applications than simple file exchange.

Paper 31

Title: Using a Peer Evaluation System to Assess Faculty Performance and Competence [46]
Author: Marcy E. Rosenbaum, Kristi J. Ferguson, Clarence D. Kreiter, Cynda A. Johnson
Journal/Publication: Department of Family Medicine, University of Iowa, Iowa City, IA 52242, USA.
Year: 2005
Abstract: Identification of reliable methods to evaluate the newly mandated American Board of Medical Specialties (ABMS)/Accreditation Council for Graduate Medical Education (ACGME) competencies of the board-certified physician is in its early stages. In this study, we evaluated a comprehensive faculty peer evaluation system designed to assess the six competencies as well as faculty performance in their primary departmental roles and teaching. Methods: Using a one-page form containing 19 items, all faculty members evaluated all other faculty within a single department. Annual individual faculty reviews included discussion of these aggregated evaluations. Results: The reliabilities for the ACGME competency sub scales ranged from .61 to .79. While overall scores were relatively high, there was variability across faculty. Factor analysis demonstrated that evaluation items load onto three scales. The first relates to clinical practice and teaching, the second to departmental citizenship, and the third to research. An item related to systems-based practice loaded on none of the factors. Research faculty outscored other faculty on the items reflecting research skills. Faculty who had primary administrative responsibility scored higher than other faculty on measures related to role within the department. No differences in subgroup scores for clinical skills were observed. Conclusions: Using a method in which
all faculty evaluate each other can result in objective, reliable measures of faculty performance.

Paper 32

Title: mFerio: The Design and Evaluation of a Peer-to-Peer Mobile Payment System [4]
Author: Rajesh Balan, Narayan Ramasubbu, Komsit Prakobphol, Nicolas Christin and Jason Hong
Journal/Publication: Proceedings of the 7th international conference on Mobile systems, applications, and services
Year: 2009
Abstract: In this paper, we present the design and evaluation of a near-field communication-based mobile p2p payment application, called mFerio, that is designed to replace cash-based transactions. We first identify design criteria that payment systems should satisfy and then explain how mFerio, relative to those criteria, improves on the limitations of cash-based systems. We next describe mFerios implementation and user interface design, focusing on the balance between usability and security. Finally, we present the results of a two-phase user study, involving a total of 104 people, that shows that mFerio has low cognitive load and is also fast, accurate, and easy to use even outperforming cash in terms of speed and cognitive load in common payment situations.

Paper 33

Title: What Can Databases Do for Peer-to-Peer?[23]
Author: Steven Gribble, Alon Halevy, Zachary Ives, Maya Rodrig, Dan Suciu
Journal/Publication: IN WEBDB
Year: 2001
Abstract: The Internet community has recently been focused on peer-to-peer systems like Napster, Gnutella, and Freenet. The grand vision - a decentralized community of machines pooling their resources to benefit every-
one is compelling for many reasons: scalability, robustness, lack of need for administration, and even anonymity and resistance to censorship. Existing peer-to-peer (P2P) systems have focused on specific application domains (e.g., music files) or on providing file-system-like capabilities; these systems ignore the semantics of data. An important question for the database community is how data management can be applied to P2P, and what we can learn from and contribute to the P2P area. We address these questions, identify a number of potential research ideas in the overlap between data management and P2P systems, present some preliminary fundamental results, and describe our initial work in constructing a P2P data management system.

**Paper 34**

**Title:** Is Peer Review an Effective Approach for Evaluating Teachers? [32]
**Author:** David Kumrow and Becky Dahlen
**Journal/Publication:** The Clearing House, Taylor and Francis, Ltd.
**Year:** 2002
**Abstract:** Educational reform experts have argued for the past 15 years that to improve educational outcomes, teachers must have more control over their practice (Chase 1997; Harrington-Lueker 1997). Clearly, there is a need to change the traditional evaluative process that treats teachers as supervised workers rather than collegian professionals. The collegian peer review model may be the means. In this article we examine several aspects of peer review, including process, purpose, effectiveness, financial implications, and the future of peer review programs, and present case study.

**Paper 35**

**Title:** Peer Review and Evaluation of the Intellectual Work of Teaching [6]
**Author:** Daniel J. Bernstein
**Journal/Publication:** Heldref Publication
**Year:** 2008
**Abstract:** In the beginning, there were no teaching evaluations. We inferred pedagogical quality from the acclaim individuals received from colleagues
and students, based largely on testimony and hearsay. It was presumed that someone who gave insightful and interesting lectures to colleagues was also likely to be a good teacher. Institutional surveys of student opinion emerged out of the turmoil of the late ’60s. Never intended to serve as professional evaluations, the surveys were the only tangible evidence of teaching effectiveness until some faculty opened their classrooms for observation by chairs and colleagues. Historically, the peer review of teaching has typically meant only that a faculty member has watched a colleague lead a class. An observation of an hour in the life of a course yields a letter describing the performance of a teacher, and that letter becomes the peer-review component of the professors teaching evaluation. Over the past couple of decades, though, the peer review of teaching has evolved significantly. During the ’80s, some faculty members began to assemble teaching portfolios from statements of teaching philosophies, syllabus, descriptions of course intent and content, reports of colleagues classroom observations, and summaries of student-survey results.

**Paper 36**

**Title:** MobiHide: A Mobile Peer-to-Peer System for Anonymous Location-Based Queries [21]

**Author:** Gabriel Ghinita, Panos Kalnis, Spiros Skiadopoulos

**Journal/Publication:** Springer-Verlag

**Year:** 2007

**Abstract:** Modern mobile phones and PDAs are equipped with positioning capabilities (e.g., GPS). Users can access public location-based services (e.g., Google Maps) and ask spatial queries. Although communication is encrypted, privacy and confidentiality remain major concerns, since the queries may disclose the location and identity of the user. Commonly, spatial K-anonymity is employed to hide the query initiator among a group of K users. However, existing work either fails to guarantee privacy, or exhibits unacceptably long response time. In this paper we propose MobiHide, a Peer-to-Peer system for anonymous location-based queries, which addresses these problems. MobiHide employs the Hilbert space-filling curve to map the 2-D locations of mobile users to 1-D space. The transformed locations are indexed by a Chord-based distributed hash table, which is formed by the mobile devices. The resulting Peer-to-Peer system is used to anonymity a query by mapping
it to a random group of K users that are consecutive in the 1-D space. We show that MobiHide provides strong anonymity, very close to the theoretical bound, while achieving good load balancing and fault tolerance. Moreover, the response time is short, rendering MobiHide applicable to real-life scenarios with large populations of mobile users.

**Paper 37**

**Title:** Admission Control in Peer-to-Peer: Design and Performance Evaluation [48]

**Author:** Nitesh Saxena, Gene Tsudik, Jeong Hyun Yi

**Journal/Publication:** ACM

**Year:** 2003

**Abstract:** Peer-to-Peer (P2P) applications and services are very common in today's computing. The popularity of the P2P paradigm prompts the need for specialized security services which makes P2P security an important and challenging research topic. Most prior work in P2P security focused on authentication, key management and secure communication. However, an important prerequisite for many P2P security services is secure admission, or how one becomes a peer in a P2P setting. This issue has been heretofore largely untouched. This paper builds upon some recent work [11] which constructed a peer group admission control framework based on different policies and corresponding cryptographic techniques. Our central goal is to assess the practicality of these techniques. To this end, we construct and evaluate concrete P2P admission mechanisms based on various cryptographic techniques. Although our analysis focuses primarily on performance, we also consider other important features, such as: anonymity, unlinkability and accountability. Among other things, our experimental results demonstrate that, unfortunately, advanced cryptographic constructs (such as verifiable threshold signatures) are not yet ready for prime time.
Paper 38

Title: Simulative Performance Evaluation of a Mobile Peer-to-Peer File-Sharing System [28]
Author: Tobias Hofeld, Kurt Tutschku, Frank-Uwe Andersen, Hermann de Meer, Jens O. Oberender
Journal/Publication: Internationales Begegnungs- und Forschungszentrum für Informatik (IBFI), Schloss Dagstuhl, Germany
Year: 2005
Abstract: Peer-to-Peer (P2P) file-sharing has become the killer application in the wired Internet and might also be highly attractive for mobile networks. In particular since UMTS operators are searching for new applications which do both: a) exploit the potential of the UMTS technology and b) motivate the user to adopt the new technology. In this work we are investigating the performance of an eDonkey-based mobile P2P file-sharing system by means of time-dynamic simulation. Mobile networks differ from wireline networks by the limited capacity of the radio link and the mobility of the users. P2P networks, in contrast, are overlays which consider the transport network in an abstract way. In a mobile environment, the question arises, whether the abstraction can be maintained and what will be the performance impact if there is any. We will show in detail how the mobile access technology (GPRS or UMTS), the churn behavior of mobile users, the file size of mobile specific content, and special infrastructure entities, such as a cache peer, influences the performance of the suggested mobile P2P file-sharing service.

Paper 39

Title: Peer Assessment and Evaluation in Team-Based Learning [10]
Author: Christina M. Cestone, Ruth E. Levine, Derek R. Lane
Journal/Publication: Wiley Online Library
Year: 2008
Abstract: In contrast to traditional courses, in which students are accountable only to the instructor, effective implementation of any group-based instructional format, including team-based learning (TBL), requires that students be accountable to both the instructor and their peers. Unfortunately,
some instructors resist using groups because of concerns about using peer evaluations or poorly designed group assignments and grading systems that in effect reward and encourage social loafing. Furthermore, their concerns seem as equally focused on unfairly raising the grades of poor students (who may be carried along by hard-working members) as they are about the potential of penalizing hard-working students (who may receive a lower course grade because they were randomly assigned to a poorly performing group).

Paper 40

**Title:** A web-based learning system for question-posing and peer assessment [60]

**Author:** Fu-Yun Yua, Yu-Hsin Liub, Tak-Wai Chan

**Journal/Publication:** Innovations in Education and Teaching International, Taylor & Francis

**Year:** 2005

**Abstract:** A web-based learning system has been developed to facilitate question-posing, peer-assessing, item-viewing and drill-and-practice learning activities. In this paper, the pedagogical basis underlying the design and development of the system is explained in the light of information-processing theory, social construction of knowledge theory and social modeling theory. A preliminary study to evaluate the instructional potential of the system has been conducted; this has also identified the factors that influence students use of the system. Results taken from questionnaires and open-ended questions revealed that by enabling students to play various roles such as composers, critics and adapters, the system was perceived as a cognition-enhancing and motivational learning tool by the participants. Data analysis further indicated that various factors worked together to influence the performance of question-posing.

Paper 41

**Title:** PowerTrust: A Robust and Scalable Reputation System for Trusted Peer-to-Peer Computing [42]
Peer-to-Peer (P2P) reputation systems are essential to evaluate the trustworthiness of participating peers and to combat the selfish, dishonest, and malicious peer behaviors. The system collects locally-generated peer feedbacks and aggregates them to yield the global reputation scores. Surprisingly, most previous work ignored the distribution of peer feedbacks. We use a trust overlay network (TON) to model the trust relationships among peers. After examining the eBay transaction trace of over 10,000 users, we discovered a power-law distribution in user feedbacks. Our mathematical analysis justifies that power-law distribution is applicable to any dynamically growing P2P systems, either structured or unstructured.

We develop a robust and scalable P2P reputation system, Power Trust, to leverage the power-law feedback characteristics. The Power Trust system dynamically selects small number of power nodes that are most reputable using a distributed ranking mechanism. By using a look-ahead random walk strategy and leveraging the power nodes, the Power Trust significantly improves in global reputation accuracy and aggregation speed. Power Trust is adaptable to dynamics in peer joining and leaving and robust to disturbance by malicious peers. Through P2P network simulation experiments, we find significant performance gains in using Power Trust. This power-law guided reputation system design proves to achieve high query success rate in P2P file-sharing applications. The system also reduces the total job make span and failure rate in large-scale, parameter-sweeping P2P Grid applications.

Paper 42

Title: Assessing Professionalism in Early Medical Education: Experience with Peer Evaluation and Self-evaluation in the Gross Anatomy Course [8]
Author: RE Bryan, AJ Krych, SW Carmichael, TR Viggiano, W Pawlina
Journal/Publication: ANNALS-ACADEMY OF MEDICINE SINGAPORE, Academy of Medicine
Year: 2005
Abstract: Introduction: As today's health care model moves toward more streamlined and corporate industrialism, it is our responsibility, as doctors,
to ensure the integrity of medicines foundation in professionalism. The ero-
sion of professional values not only creates a climate of animosity, but rever-
berates negatively to impact the development of students, who model their
behavior after those they most respect. This hazard has spurred an evalua-
tion of medical school curricula, with a new emphasis on professionalism in
the philosophy of medical education. Courses such as Gross Anatomy that,
in the past, offered pure content, are now being used to teach and evaluate
professionalism. The goal of this study was to determine if peer evaluation
and self-evaluation used in conjunction and implemented early in the medical
curriculum, can serve as useful tools to assess and provide feedback regarding
professional behavior in first-year medical students. Materials and Methods:
From 1999 to 2003, students at Mayo Clinic College of Medicine evaluated
themselves and their peers during the Gross and Developmental Anatomy
Course. Numerical evaluations and written comments were statistically an-
alyzed within established categories of professionalism and correlated with
academic performance, gender, and peer rating and self-rating. Results: The
majority of written comments pertained to inter-professional respect, respon-
sibility, and excellence. Students who gave higher peer evaluation and self-
evaluation scores provided more positive comments, and students perform-
ing well in the course provided more positive comments about their peers
and themselves than did those struggling academically. Students consistently
rated their peers higher than themselves, and male students rated themselves
higher than did female students. Conclusions: Implementing peer evaluation
and self-evaluation early in the medical curriculum is a valuable exercise in
teaching first-year medical students assessment skills when evaluating their
behavior, as well as the behavior of their colleagues.

**Paper 43**

**Title:** A Peer-to-Peer On-Demand Streaming Service and Its Performance Evaluation [25]

**Author:** Yang Guo, Kyoungwon Suh, Jim Kurose, and Don Towsley

**Journal/Publication:** IEEE Computer Society

**Year:** 2003

**Abstract:** Providing on-demand video streaming service over the Internet
is a challenging task. In this paper, we propose Direct Stream, a directory
based peer-to-peer video streaming service that efficiently and cost-effectively provides video on-demand service with VCR operation support. We analytically and experimentally examine the system performance, and show that the proposed scheme can significantly reduce the workload posed on the server, and that it scales extremely well as the popularity of the video increases even if participating clients behave non-cooperatively. We propose a QoS parent selection algorithm to construct the appropriate peer-to-peer networks, and discuss how to provide continuous playback in the face of clients early departures. Our study suggests that peer-to-peer networking is a promising technique to address scalability in on-demand streaming service.

Paper 44
Title: Self-Grading In Large General Education Classes: A Case Study [51]
Author: Brent Strong, Mark Davis, Val Hawks
Journal/Publication: Taylor and francis online
Year: 2004
Abstract: In a large general education class where students demonstrate their personal creativity, a self-grading system was used during one semester and a conventional teacher-evaluation system was used during the second semester. The purpose was to gauge whether the self-grading system was appropriate. Students adapted well to the procedures used, and they reported feeling more motivated to learn and took more responsibility for their learning. A disadvantage was a tendency for grade inflation to occur.

Paper 45
Title: Some Refinements on Peer Assessment of Group Projects [33]
Author: Lawrence K. Y. Li
Journal/Publication: Taylor and francis online
Year: 2001
Abstract: As the demand for group projects in higher education has increased in recent years, it is necessary to devise an assessment method that results in fair grading of project group members. An attempt has been made
to apply an existing peer assessment approach from Goldfinch to engineering student group projects. The results confirm the validity of the approach. However, the existing approach has a number of problems owing to the inevitable bias introduced by individual students during the peer assessment process. A new normalisation process is introduced to iron out the inherent shortcomings of the existing peer assessment method. The experience gained so far has led us to believe that this peer assessment method with normalisation can be used as a tool to assess individual marks of a group project.

Paper 46

**Title:** Peer-Supervised Learning with Built-in Quality Control Based on Multiple-Choice Questions [29]

**Author:** Christian Htter, Tobias Kimmerle and Klemens Bhm

**Journal/Publication:** Advanced Learning Technologies (ICALT), 2012 IEEE 12th International Conference on

**Year:** 2012

**Abstract:** Rating multiple choice questions (MCQ) created by peers has been touted as a good approach to peer assessment. The main challenge in this setting is to ensure the quality of peer assessment. Existing approaches rely on the assumption that students intrinsically create high-quality ratings. We propose an incentive mechanism to increase the quality of ratings. To evaluate our approach, we have conducted a case study with 242 students and 17 experts. Our results show that peer ratings are a good predictor of expert ratings. Furthermore, we develop a model that reliably measures the performance of students, but does not require expert ratings.

Paper 47

**Title:** Alternatives to instructor assessment of class participation [22]

**Author:** C Gopinath

**Journal/Publication:** Taylor & Francis

**Year:** 1999

**Abstract:** The desire for increased student involvement in the learning pro-
cess extends to the arena of assessment. This study examined peer and self-assessment as alternatives to instructor assessment of class participation in the MBA strategy course. Data from three samples did not provide unequivocal support for their use in formal grading procedures. However, the study suggests that the use of peer assessment provides a necessary feedback to students and instructors and supports the broader objectives of class participation.

**Paper 48**

**Title:** Use of Peer-Review System for Enhancing Learning of Programming [27]
**Author:** Harri Hmlinen, Jukka Tarkkonen, Kari Heikkinen, Jouni Ikonen and Jari Porras
**Journal/Publication:** IEEE International Conference on Advanced Learning Technologies
**Year:** 2009

**Abstract:** In this paper we present a study where a peer reviewing system targeted for conference paper evaluation has been used for enhancing the learning of programming though peer review. For peer reviewing purposes two open source systems were evaluated and MyReview was selected for evaluation. The peer review system was used in one programming focused course and the benefits of peer reviewing were analyzed from the reviewer and reviewee point of view. The results show that a peer review system targeted for conference paper evaluations is applicable for reviewing programs although the system should be much simpler. Students appreciated the documented comments from other students but were more interested in lecturer or other expert opinion.

**Paper 49**

**Title:** Web-based peer assessment: feedback for students with various thinking-styles [34]
**Author:** S.S.J. Lin, E.Z.F. Liu S.M. Yuan
Journal/Publication: Journal of Computer Assisted Learning, volume 17
Year: 2001
Abstract: This study used aptitude treatment interaction design to examine how feedback formats (specific vs. holistic) and executive thinking styles (high vs. low) affect web-based peer assessment. An Internet-based (anonymous) peer-assessment system was developed and used by 58 computer science students who submitted assignments for peer review. The results indicated that while students with high executive thinking styles significantly improved over two rounds of peer assessment, low executive students did not improve through the cycles. In addition, high executive students contributed substantially better feedback than their low executive counterparts. In the second round of peer assessment, thinking style and feedback format interactively affected student learning. Low executive students receiving specific feedback significantly outperformed those receiving holistic feedback. In receiving holistic feedback, high executive thinkers outperformed their low executive counterparts. This study suggests that future web-based peer assessment adopts a specific feedback format for all students.

Paper 50
Title: Peer assessment in university teaching: evaluating seven course designs [56]
Author: Ineke van den Berg, Wilfried Admiraal and Albert Pilot
Journal/Publication: Assessment & Evaluation in Higher Education Vol. 31
Year: 2006
Abstract: Peer assessment is understood to be an arrangement with students assessing the quality of their fellow students' writings and giving feedback to each other. This multiple-case study of seven designs of peer assessment focuses on the contribution of peer assessment to the acquisition of undergraduates writing skills. Its aim is to arrive at an optimal design of peer assessment. Factors included in this study are: the quality of peer assessment activities, the interaction between students in oral peer feedback, students' learning outcomes, and their evaluation of peer assessment. Most students took assessing the work of their fellow students seriously, and included the peer feedback in the revision of their work. In most conversations, students
provided feedback in an evaluative manner. In others, the interaction was more exploratory. For peer assessment, we recommend a combination of written and oral peer feedback.

Paper 51

Title: The use of self, peer and co-assessment in higher education [15]
Author: F. Dochy, M. Segers & D. Sluijsmans
Journal/Publication: Studies in Higher Education, volume 24
Year: 1999
Abstract: The growing demand for lifelong learners and reflective practitioners has stimulated a re-evaluation of the relationship between learning and its assessment, and has influenced to a large extent the development of new assessment forms such as self-, peer, and co-assessment. Three questions are discussed: (1) what are the main findings from research on new assessment forms such as self-, peer and co-assessment; (2) in what way can the results be brought together; and (3) what guidelines for educational practitioners can be derived from this body of knowledge? A review of literature, based on the analysis of 63 studies, suggests that the use of a combination of different new assessment forms encourages students to become more responsible and reflective. The article concludes with some guidelines for practitioners.

Paper 52

Title: Student responses to criteria-referenced self-assessment [2]
Author: Heidi Andrade and Ying Du
Journal/Publication: Assessment & Evaluation in Higher Education, Routledge
Year: 2007
Abstract: This paper reports on a study of undergraduate student’s experiences with criteria-referenced self-assessment. Fourteen students who had taken a course involving self-assessment were interviewed in focus groups segregated by gender. The findings suggest that students had positive attitudes toward self-assessment after extended practice; felt they can effectively
self-assess when they know their teacher’s expectations; claimed to use self-assessment to check their work and guide revision; and believed the benefits of self-assessment include improvements in grades, quality of work, motivation and learning. There were indications that some students sensed a tension between their own standards for good work and some of their teacher’s standards. There was no evidence of differences in the responses of male and female students. The paper concludes with the suggestion that self-assessment involves a complex process of internalization and self-regulation, and with implications for research and practice.

**Paper 53**

**Title:** Is P2P dying or just hiding?

**Author:** Thomas Karagiannis, Andre Broido, Nevil Brownlee, kc claffy, Michalis Faloutsos [31]

**Journal/Publication:** IEEE Volume 3

**Year:** 2004

**Abstract:** Recent reports in the popular media suggest a significant decrease in peer-to-peer (P2P) le-sharing trafic, attributed to the public’s response to legal threats. Have we reached the end of the P2P revolution? In pursuit of legitimate data to verify this hypothesis, we embark on a more accurate measurement effort of P2P trafic at the link level. In contrast to previous efforts we introduce two novel elements in our methodology. First, we measure trafic of all known popular P2P protocols. Second, we go beyond the known port limitation by reverse engineering the protocols and identifying characteristic strings in the payload. We nd that, if measured accurately, P2P trafic has never declined; indeed we have never seen the proportion of p2p trafic decrease over time (any change is an increase) in any of our data sources.

**Paper 54**

**Title:** Effective peer assessment for learning computer programming [50]

**Author:** Jirarat Sitthiworachart, Mike Joy
Journal/Publication: ACM
Year: 2004
Abstract: Peer assessment is a technique that has been successfully employed in a variety of academic disciplines, and which is considered to be effective in developing students higher cognitive skills. In this paper, we consider the results of applying novel web-based technology to the delivery of peer assessment in the context of an undergraduate computer programming course, and discuss the benefits of this approach

Paper 55

Title: The PeerWise system of student contributed assessment questions
Author: Paul Denny, Andrew Luxton-Reilly, John Hamer
Journal/Publication: Australian Computer Society, Inc.
Year: 2008
Abstract: Large test banks of multiple choice questions (MCQs) are popular resources for students wishing to quickly learn course material. However, they are time consuming to create and over a somewhat limited learning experience. Peer Wise offers an innovative approach that enhances standard teaching and learning practice by requiring students to participate in the construction and evaluation of MCQs. The system encourages the development of higher order cognitive skills and enhances student learning with virtually no additional cost to teaching start. We have now used Peer Wise in several large undergraduate programming courses, and report here on the design of the system and its user interface, identify several related systems, discuss our motivation and underlying teaching philosophy, and present some usage and performance results.

Paper 56

Title: A Bayesian truth serum for subjective data
Author: Drazen Prelec
Journal/Publication: American Association for the Advancement of Sci-
Subjective judgments, an essential information source for science and policy, are problematic because there are no public criteria for assessing judgmental truthfulness. I present a scoring method for eliciting truthful subjective data in situations where objective truth is unknowable. The method assigns high scores not to the most common answers but to the answers that are more common than collectively predicted, with predictions drawn from the same population. This simple adjustment in the scoring criterion removes all bias in favor of consensus: Truthful answers maximize expected score even for respondents who believe that their answer represents a minority view.

**Paper 57**

**Title:** Web-based peer review: the learner as both adapter and reviewer [36]

**Author:** Eric Zhi-Feng Liu, Sunny S. J. Lin, Chi-Huang Chiu, and Shyan-Ming Yuan

**Journal/Publication:** Education, IEEE Transactions on, volume 44

**Year:** 2001

**Abstract:** This study describes an effective web-based learning strategy, peer review, used by 143 computer science undergraduate students in an Operating Systems class at a Taiwanese university. Peer review, based on social constructiveness, can be easily implemented via the authors well-developed web-based peer review (WPR) system. Through peer review, the authors hope to form an authentic learning environment similar to an academic society in which a researcher submits a paper to a journal and receives reviews from society members before publication. Students using this learning strategy are expected to develop higher level thinking skills. The WPR system functioned in the following roles in this study: 1) an information distribution channel and management center for assignment submissions and peer review; 2) a forum for peer interaction and knowledge construction; and 3) storage for knowledge construction procedures. An evaluation of learning effects and students perceptions about peer review during the spring of 1998 revealed that students not only performed better under peer review, but also displayed higher level thinking skills, i.e., critical thinking, planning, monitoring, and regulation. Students perceived peer review as an effective strategy that pro-
moted their learning motivation. However, merely being an effective reviewer or an effective author may not excel in a peer review environment. The most effective individual appears to be the strategic adapter who effectively constructs a project, adj

**Paper 58**

**Title:** SPARK, a confidential web-based template for self and peer assessment of student teamwork: benefits of evaluating across different subjects [19]

**Author:** Mark Freeman, Jo McKenzie

**Journal/Publication:** Wiley Online Library

**Year:** 2002

**Abstract:** Students often enjoy learning in teams and developing teamwork skills, but criticize team assessment as unfair if there is equal reward for unequal contributions. This paper describes the design, implementation and evaluation in four subjects of the Self and Peer Assessment Resource Kit (SPARK), a webbased template which aims to improve learning from team assessment tasks and make the assessment fairer for students. Students benefit because the webbased template improves confidentiality and the potential for accurate assessment of relative contributions. Academics benefit through the potential for improving student learning from teamwork tasks, and saving time by automating the process of calculating self and peer adjustments of assessment grades, especially attractive for large enrollments. Benefits accrue to the institution and wider academic community because the template suits a range of group assessment situations. Based on experiences gained over five years of developing, evaluating and implementing SPARK, this paper aims to illustrate the potential benefits of the template to potential users and more critically, to use what was learned from implementing the template across a range of subjects to alert others to key issues for evaluating and disseminating educational technology innovations
Paper 59

Title: An analysis of peer, self, and tutor assessment in problem-based learning tutorials [40]

Author: TRACEY PAPINCZAK, LOUISE YOUNG, MICHELE GROVES & MICHELE HAYNES

Journal/Publication: Informa UK Ltd UK

Year: 2007

Abstract: Objective: The purpose of this study was to explore self-, peer-, and tutor assessment of performance in tutorials among first year medical students in a problem-based learning curriculum. Methods: One hundred and twenty-five students enrolled in the first year of the Bachelor of Medicine and Bachelor of Surgery Program at the University of Queensland were recruited to participate in a study of meta cognition and peer- and self-assessment. Both quantitative and qualitative data were collected from the assessment of PBL performance within the tutorial setting, which included elements such as responsibility and respect, communication, and critical analysis through presentation of a case summary. Self-, peer-, and tutor assessment took place concurrently. Results: Scores obtained from tutor assessment correlated poorly with self-assessment ratings (r = 0.31 - 0.41), with students consistently under-marking their own performance to a substantial degree. Students with greater self-efficacy, scored their PBL performance more highly. Peer-assessment was a slightly more accurate measure, with peer-averaged scores correlating moderately with tutor ratings initially (r = 0.40) and improving over time (r = 0.60). Students consistently over-marked their peers, particularly those with skeptical attitudes to the peer-assessment process. Peer over-marking led to less divergence from the tutor scoring than under-marking of ones own work. Conclusion: According to the results of this study, first-year medical students in a problem-based learning curriculum were better able to accurately judge the performance of their peers compared to their own performance. This study has shown that self-assessment of process is not an accurate measure, in line with the majority of research in this domain. Nevertheless, it has an important role to play in supporting the development of skills in reflection and self-awareness.
Title: Developing Procedures for Implementing Peer Assessment in Large Classes Using an Action Research Process [5]
Author: Roy Ballantyne, Karen Hughes & Aliisa Mylonas
Journal/Publication: Taylor & Francis On-line
Year: 2002
Abstract: Peer assessment has been used successfully in higher education, with important benefits reported in terms of student learning. However, most of the literature has focused on its use with small groups of students taught by staff who are committed to the peer assessment process. This paper reports the development of peer assessment procedures for use in large classes, using a cyclical process of action, reflection and refined action. The project was carried out in three phases and after each phase changes were made to the procedures in response to student and staff feedback. The development of procedures is discussed in relation to assessment tasks, assessment criteria, anonymity, procedural guidelines, distribution systems, marking procedures and tutor remarking. Although there are specific difficulties associated with the use of peer assessment in large classes, this study suggests that these are outweighed by the learning benefits for students. Based on the findings of this study, recommendations are made for ways in which peer assessment might be successfully applied in large classes.
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