Contents of this ftp directory as of 3/21/2010

Papers about Task Analysis and Modeling in general

In the TA_Modeling directory

Model-based_eval.pdf
preprint of
Kieras, D.E. (2003). Model-based evaluation. In Jacko, J.A. & Sears, A. (Eds) *The human-computer interaction handbook*. Mahwah, New Jersey: 1139-1151.

TaskAnalysisV2.pdf
A preprint of
Kieras, D. E. (in press). Task analysis and the design of functionality. In A. Tucker (Ed.) *The Computer Science and Engineering Handbook* (2nd Edition). Boca Raton, CRC Press, Inc. Includes discussion of high-level GOMS models.
This is a revised version of:
Kieras, D. E. (1997). Task analysis and the design of functionality. In A. Tucker (Ed.) *The Computer Science and Engineering Handbook*. Boca Raton, CRC Press, Inc. Includes discussion of high-level GOMS models.

TR-EPIC-11.pdf
Kieras, D. & Meyer, D.E. The role of cognitive task analysis in the application of predictive models of human performance. (EPIC Tech. Rep. No. 11, TR-98/ONR-EPIC-11). Ann Arbor, University of Michigan, Electrical Engineering and Computer Science Department. March 5, 1998.
Final version appears in Kieras, D. E., & Meyer, D. E. (2000). The role of cognitive task analysis in the application of predictive models of human performance. In J. M. C. Schraagen, S. E. Chipman, & V. L. Shalin (Eds.), *Cognitive task analysis*. Mahwah, NJ: Lawrence Erlbaum, 2000.

GOMSforTA.pdf
preprint of
GOMS models for task analysis. To appear in D. Diaper & N.Stanton (Eds.) (in press). *Task analysis for human-computer interaction*. Erlbaum.

Beevis1992.pdf
A NATO Technical Report containing an excellent survey of task analysis methods. Not known to be otherwise published.

BeevisEssensSchuffel1995.pdf
A NATO Technical Report following up on Beevis 1992, focussing on function allocation methodology. Not known to be otherwise published.

Papers about procedural knowledge learning and execution

Closely related to the GOMS modeling work

In the Procedural_knowledge directory

KierasBovair1986.pdf

Kieras, D.E., & Bovair, S. (1986). The acquisition of procedures from text: A production-system analysis of transfer of training. *Journal of Memory and Language, 25,* 507-524.

KierasPolson1985.pdf

Kieras, D. E., & Polson, P. G. (1985). An approach to the formal analysis of user complexity. *International Journal of Man-Machine Studies*, 22, 365-394.

BovairKierasPolson1990.pdf

Bovair, S., Kieras, D. E., & Polson, P. G. (1990). The acquisition and performance of text editing skill: A cognitive complexity analysis. *Human-Computer Interaction*, 5, 1-48.

PolsonKieras1985.pdf

Polson, P.G., & Kieras, D.E. (1985). A quantitative model of the learning and performance of text editing knowledge. In *Proceedings of the CHI '85 Conference on Human Factors in Computing Systems,* (San Francisco, April, 1985).

BovairKieras1991.pdf

Bovair, S. & Kieras, D.E. (1991). Toward a model of acquiring procedures from text. In R. Barr, M. L. Kamil, P. Mosenthal and P. D. Pearson (Eds.), *Handbook of Reading Research,* Vol. II, (pp. 206-229). New York: Longman.

Papers about GOMS and GOMS methodology

In the GOMS directory

GongKieras1994.pdf
Gong, R., & Kieras, D. (1994). A Validation of the GOMS Model Methodology in the Development of a Specialized, Commercial Software Application. In *Proceedings of CHI, 1994*, Boston, MA, USA, April 24-28, 1994). New York: ACM, pp. 351-357.

KierasEtAl1995.pdf
Kieras, D.E., Wood, S.D., Abotel, K., & Hornof, A. (1995). GLEAN: A Computer-Based Tool for Rapid GOMS Model Usability Evaluation of User Interface Designs. In UIST'95: *Proceedings of the ACM Symposium on User Interface Software and Technology*, New York: Association for Computing Machinery, pp. 91-100.

GOMSL_Guide vxx.pdf
The current version of a guide to using the executable version of the GOMS notation, called GOMSL. Describes the GLEAN tool available here in the GLEAN_distribution directory.

NGOMSL_Guide.pdf
Current version of the Guide to GOMS Analysis using NGOMSL.
Similar to Kieras, D. E. (1997). A Guide to GOMS model usability evaluation using NGOMSL. In M. Helander, T. Landauer, and P. Prabhu (Eds.), *Handbook of human-computer interaction*. (Second Edition). Amsterdam: North-Holland. 733-766.

John-Kieras-TR94.pdf
The John & Kieras technical report on the family of GOMS models. Revised version is published in TOCHI in two parts.

Compare-GOMS.pdf
John, B. E., & Kieras, D. E. (1996). The GOMS family of user interface analysis techniques: Comparison and contrast. *ACM Transactions on Computer-Human Interaction*, 3, 320-351. A revised version of part of John-Kieras-TR94.pdf

Which-GOMS.pdf
John, B. E., & Kieras, D. E. (1996). Using GOMS for user interface design and evaluation: Which technique? *ACM Transactions on Computer-Human Interaction*, 3, 287-319. A revised version of part of John-Kieras-TR94.pdf

KLM.pdf
Teaching handout on how to use the Keystroke-Level Model.

Santoro_et_al.pdf
Preprint of

Santoro, T.P., Kieras, D.E., & Pharmer, J.A. Verication and validation of latency and workload predictions for a team of humans by a team of computation models. In press at U.S. Navy *Journal of Underwater Acoustics*, Special Issue on Modeling and Simulation.

Kieras_Santoro_CHI04.pdf
Preprint of
Kieras. D.E. & Santoro, T.P. (2004). Computational GOMS Modeling of a Complex Team Task: Lessons Learned. In *Proceedings of CHI 2004: Human Factors in Computing Systems*. New York: ACM, Inc.

KierasKnudsen2006.pdf
Preprint of:
Kieras, D., & Knudsen, K. (2006). Comprehensive Computational GOMS Modeling with GLEAN. In Proceedings of BRIMS 2006, Baltimore, May 16-18, 2006.

KierasHCII05.pdf
Preprint of
Kieras, D.E. (2005). Fidelity issues in cognitive architectures for HCI modeling: Be careful what you wish for. In *Proceedings of HCI International 2005*, July 22-27, Las Vegas, Nevada.

Wood_IITSEC2002.pdf
Preprint of
Wood, S.D., Kieras, D.E. (2002). Modeling Human Error for Experimentation, Training, and Error-Tolerant Design. *Proceedings of the 2002 Interservice/Industry Training Systems and Education Conference (I/ITSEC)*. Orlando, FL. December 2002.

UIST95.pdf
A preprint of
Kieras, D. E., Wood, S. D., Abotel, K., & Hornof, A. (1995). GLEAN: A Computer-Based Tool for Rapid GOMS Model Usability Evaluation of User Interface Designs. *UIST'95 Proceedings*.

GOMS modeling software

The GLEAN_distribution directory contains versions of Glean that can be downloaded.
.sea is a Mac Stuffit self-extracting archive.
.zip is a Windows zip archive

SAGlean.sea
SAGlean.zip
Standalone-versions of Glean3 executables - contains a dummy device and will work with your own gomsl files.

Gleandemo.zip
Contains a simple radar operator's console simulated device.(GLEAN3)

Papers about the EPIC architecture for modeling human cognition and performance

In the EPIC directory

EPICPrinOp.pdf
An electronically published document describing details of the EPIC architecture. See also the materials in the EPICtutorial directory

TR-EPIC-4.pdf
Kieras, Wood, and Meyer technical report on applying EPIC to predict telephone operator task times. Revised version appears in
KierasWoodMeyer97.pdf
Kieras, D.E., Wood, S.D., & Meyer, D.E. (1997). Predictive engineering models based on the EPIC architecture for a multimodal high-performance human-computer interaction task. *ACM Transactions on Computer-Human Interaction*. 4, 230-275.

TR-EPIC-5.pdf
Kieras & Meyer technical report containing a good overview and summary of EPIC.

Revised version appears in Kieras, D. & Meyer, D.E. (1997). An overview of the EPIC architecture for cognition and performance with application to human-computer interaction. *Human-Computer Interaction*., 12, 391-438.

TR-EPIC-12.pdf
Kieras, D.E., Meyer, D.E., Ballas, J.A., Lauber, E.J. Modern computational perspectives on executive mental processes and cognitive control. Where to from here? (EPIC Tech. Rep. No. 12, TR-98/ONR-EPIC-12). Ann Arbor, University of Michigan, Electrical Engineering and Computer Science Department. August 1, 1999.

Final version appears in Kieras, D. E., Meyer, D. E., Ballas, J. A., & Lauber, E. J. (2000). Modern computational perspectives on executive mental control: Where to from here? In S. Monsell & J. Driver (Eds.), *Control of cognitive processes: Attention and performance XVIII* (pp. 681-712). Cambridge, MA: M.I.T. Press.

TR-EPIC-13.pdf
Kieras, D.E., Ballas, J.A., & Meyer, D.E. Computational Models for the Effects of Localized Sound Cuing in a Complex Dual Task.(EPIC Tech. Rep. No. 12, TR-01/ONR-EPIC-13). Ann Arbor, University of Michigan, Electrical Engineering and Computer Science Department. January 31, 2001.

ComConSymp95.pdf
Kieras & Meyer conference paper: "Predicting Human Performance in Dual-Task Tracking and Decision Making with Computational Models using the EPIC Architecture." In the *Proceedings of the 1995 International Symposium on Command and Control Research and Technology*, National Defense University, Washington D.C., June, 1995.

CHI97.pdf
Hornof & Kieras, "Cognitive Modeling Reveals Menu Search is both Random and Systematic." *CHI'97*

Kieras_etal_CHI01.pdf
Kieras, D.E., Meyer, D.E., & Ballas, J. Towards demystification of direct manipulation: Cognitive modeling charts the gulf of execution. *CHI 2001*.

KierasHCII05.pdf
Preprint of
Kieras, D.E. (2005). Fidelity issues in cognitive architectures for HCI modeling: Be careful what you wish for. In *Proceedings of HCI International 2005*, July 22-27, Las Vegas, Nevada.

EPIC Tutorial Materials
The directory
EPICtutorial
contains presentation slides and sample models from a tutorial on EPIC, presented at ICCM 2004.

Papers about text and natural language processing

in the TEXT_NLP directory

CCSTalk92.pdf
Kieras, D. The Computerized Comprehensibility System: An Aid for Comprehensible Writing of Technical Material. Presented at the Human Communication Research Center, University of Edinburgh, August 27, 1992.

TR21.pdf
A remake of:
Kieras, D. E., & Dechert, C. (1985). Rules for Comprehensible Technical Prose: A Survey of the Psycholinguistic Literature (Tech. Rep. No. 21, TR-85/ONR-21). Ann Arbor: University of Michigan, Technical Communication Program. (DTIC AD A157586).

TR33.pdf
Kieras, D.E. (1990). The computerized comprehensibility system maintainer's guide (Tech. Rep. No. 33, TR-90/ONR33). Ann Arbor: University of Michigan, Technical Communication Program.

TR35.pdf
Kieras, D.E. (1992). Semantics-Based Reference Resolution in Technical Text Processing: An Exploration of Using the WordNet Database in the Computerized Comprehensibility System. (Tech. Rep. No. 35, TR-92/ONR35). Ann Arbor: University of Michigan, Technical Communication Program. (DTIC AD A255068)