WORKSHOP REPORT

The Sixth Canadian Workshop on Information Theory

Kingston, Ontario
June 15 - June 18, 1999

The Sixth Canadian Workshop on Information Theory was held June 15-18, 1999, at The Holiday Inn in Kingston, Ontario. The workshop was sponsored by the Canadian Society for Information Theory, with generous financial support from Communications and Information Technology Ontario, Communications Research Center, the Department of Electrical and Computer Engineering and the Department of Mathematics and Statistics at Queen's University, the Kingston Chapter of the IEEE and Nortel Networks.

The Canadian Society for Information Theory was formed in 1983, following a very successful IEEE International Symposium on Information Theory held in St. Jovite. The purpose of the Society is to promote research in Information Theory in Canada, and this workshop (which is held biannually) is the major avenue by which this purpose is accomplished. Previous workshops were held in St. Jovite, Sydney (B.C.), Rockland, Ville du Lac Delage, and Toronto.

The workshop, which featured 80 attendees from 11 countries, was organized as a single track held over two-and-a- half days. The technical program included five invited plenary lectures and 32 presentations distributed over five sessions. A brief list of the plenary speakers and the sessions follows.

From left to right: F. Alajaji, N. C. Beaulieu, I. Blake, F. Kschischang and G. Brassard.

From left to right: N. C. Beaulieu, L.L. Campbell, F. Alajaji and P. J. McLane.

T. Berger

- *Plenary Lectures*
  (Chair: L. Lorne Campbell - Queen's University)
  - Designing Codes for the Wireless Channel
    Ezio Biglieri - Politecnico di Torino
  - A Conceptualization of Intra-Organism Information Theory
    Toby Berger - Cornell University
  - Performance of Convolutional and Turbo Codes with Quantized Measurements
    Peter J. McLane - Queen's University
  - On Cellular Mobile Communications
    Jon W. Mark - University of Waterloo
  - Quantum Information Processing
    Gilles Brassard - Universit6 demontr6al
- *Channel Coding*
  (Chair: Frank Kschischang - University of Toronto)
- *Source Coding*
  (Chair: Nam Phamdo - SUNY at Stony Brook)
- *Communication Systems and Components*
  (Chair: Amir K. Khandani - University of Waterloo)
- *Wireless Communications*
  (Chair: Jean-Yves Chouinard - University of Ottawa)
- *Information Processing*
  (Chair: Glen K. Takahara - Queen's University)

On June 17, the annual meeting of the Canadian Society for Information Theory was held. During the workshop banquet the *1999 Canadian Award in Telecommunications* was presented to Ian Blake for "significant research contributions, scholarship, and leadership in the fields of algebraic coding theory and cryptography." Previous winners of this award are J. F. Hayes (1996), L. L. Campbell (1994), S. Haykin (1992) and R. de Buda (1990).

E. Biglieri.

The workshop Co-Chairs were Fady Alajaji (Queen's University) and Norman C. Beaulieu (Queen's University). The Technical Program Committee consisted of Fady Alajaji (Queen's University), Norman C. Beaulieu (Queen's University), L. Lorne Campbell (Queen's University), Tamds Linder (Queen's University), Nam Phamdo (SUNY at Stony Brook) and Glen K. Takahara (Queen's University) .

A full list of the papers and contributors can be found at:

http://markov.mast.queensu.ca/~fady/CWIT99/cwit99.html.

The proceedings (ISBN 0-88911-842-6, 154 pages) can be obtained by contacting Fady Alajaji at fady@polya.mast.queensu.ca.

New Books

Raymond Yeung

The Mobile Communications Handbook, 2nd Ed.,
Edited by J. D. Gibson. Springer-Verlag, 1999, 600 pp., $161, ISBN 3-540-64836-4.
Contents: Basic Principles: Complex Envelope Representations for Modulated Signals; Sampling; Pulse Code Modulation; Baseband Signaling and Pulse Shaping; Equalization; Line Coding; Echo Cancellation; Pseudonoise Sequences; Optimum Receivers; Forward Error Correcting Coding; Spread Spectrum; Diversity Techniques; Digital Communications System Performance; Standards Setting Bodies. Wireless: Overview; Modulation Methods; Access Methods; Fading Channels; Statistical Distributions of the Fading Channel; Space-Time Processing; Location Strategies for Personal Communications Services; Analysis of IS-41 C Authentication Protocols for PCs; Cell Design Principles; Microcellular Radio Communications; Fixed and Dynamic Channel Assignment; Radio Location Techniques; Power Control; Enhancements in Second Generation Systems; Pan-European Cellular Standard; IS-54 North American Cellular Standard; British Cordless Telephone Standard; RACE Programs; Half-Rate Standards; Wireless Video Standards; Fixed and Dynamic Channel Assignment; Wireless LANs; Wireless Data; Wireless ATM; Wireless ATM2; Third Generation Systems.

Perspective in Spread Spectrum,
by Amer A. Hassan, John E. Hershey and Gary J. Saulnier. Kluwer, 1999, 176 pp., L59.95, ISBN 0-7923-8265-X.
Contents: Spreading Sequence Design; OFDM Spread Spectrum Communications; Generalization of Walsh Functions; Frequency-Hopped SS with Follower Jamming; Spat) lal Optical CDMA; Spread Spectrum Overlay and Ranging; Appendix A: The Channel's Wideband Effects.

Independent Component Analysis: Theory and Applications,
by Te-Won Lee. Kluwer, 1998, 240 pp., C80.25, ISBN 0-7923-8261-7.
Contents: Introduction; Part I: Theory: Basics, Independent Component Analysis, A Unifying Information-Theoretic Framework for ICA, Blind Sep aration of Time-Delayed and Convolved Sources, ICA Using Overcomplete Representations, First Steps towards Nonlinear ICA; Part II: Applications: Biomedical Applications of ICA; ICA for Feature Extraction; Unsupervised Classification with ICA Mixture Models; Conclusions and Future Research.

Introduction to Matrix Analytic Methods in Stochastic Modeling,
by G. Latouche and V. Ramaswami. SIAM, 1999, 334 pp., $29.95, ISBN 0-89871-425-7.

Remote Sensing Digital Image Analysis: An Introduction, 3rd Ed.,
by J. A. Richards and X. Jia. Springer-Verlag, 1999, 356 pp., $93, ISBN 3-540-64860-7.

High Quality Messaging and Electronic Commerce,
by G. Schmied. Springer-Verlag, 1999, 184 pp., $86, ISBN 3-54064618-3.

Statistical Distributions in Engineering,
by Karl V. Bury. Cambridge University Press, 1999, 328 pp., L20.95, ISBN 0-521-63506-3.

Applied Neural Networks for Signal Processing,
by FA-Long Luo. Cambridge University Press, 1997, 381 pp., L50, ISBN 0-521-56391-7.

Broadband Access Networks,
Edited by Leif Aarthun Ims. Kluwer, 1998, 400 pp., E89.95, ISBN 0-412-82820-0.