

第5回パターン認識国際会議参加報告

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1. まえがき

本文は、昨年12月に行われたパターン認識国際会議に関する報告である。この会議の概要は次の通りである。発表論文数300件以上、参加者約600名、論文集

会議名：第5回パターン認識国際会議
(The 5th International Joint Conference
on Pattern Recognition)

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は2巻1400ページにもなり、かなりの大会議であった。しかも、発表論文の恐らく8割が本研究会の対象分野である画像処理に関連するものと思われる。従って1人で会議全体を見通すことは望むべくもなく、やむをえず、会議に参加された表記の方々に適当なセッションの状況を簡単にメモして頂き、それを鳥脇がとりまとめて、本資料を作成した。次の章にそれらを記すが、

紙数の制約のため原文を圧縮した部分もかなりある。従って、説明に不備な点があればその責任は鳥脇にあることをお断りしておく。本文3章には、プログラム及び参加者数、論文数の詳細が示されている。なお、本会議の第6回は、1982年10月19-22日に西独ミュンヘンで、第7回は1984年にカナダのモントリオールで開催されることになっている。

2. 研究発表の状況

【情景解析、物体認識】 いまや知識利用に基づく処理が通例化し、人工知能分野寄りの処理技法の導入が見受けられる。知識として与えられる認識対象のモデルが2次元から3次元に高度化されて来つつある。このような知識利用の導入に伴い知識表現が問題となるが、これに関する報告は少なく、不十分と思われる。もう一つの動向は、上述のモデルの高度化とも関連するが、「3次元解析」というセッションが設けられたことに代表されるように、画像処理の対象が3次元物体、あるいは空間に拡張されて来たことである。連続画像処理の分野では、本来の目的ばかりこの傾向が顕著であり、3次元的な詳細な動作の認識や運動の認識を考慮した質の高い報告もあった。

しかし、第4回の本会議と比べて、音声認識、文字認識に関する発表が減った（これは米国、日本の研究状況の反映か？）、従来は人工知能の一分野とされてきた物体認識に関連した発表が増加している。（北橋）

【3次元解析】 上記3次元解析（3-D Analysis）のセッションでは、次の論文が発表された。まづ、R. Bajcsy は招待講演で3-Dデータの入手法、3-D物体の記述

法及び認識法等についての研究動向を解説した。以下はすべて一般講演である。S.N. Srihariらは、CT画像のように断面画像の系列として与えられる3-Dモデルの情報七報う場合に、木構造による階層的表現を用いて処理する方法を発表した。B. Radigは、簡単な形状の運動物体に関する2次元画像の時系列から3-Dモデルを構成するための記号的記述法について述べた。M. Idesawaは、モアレ編を利用した3次元形状の自動入力システムおよび対話型入力システムについて発表した。T. Vámosは、照明条件を変えて得られる複数の画像から工業部品を実時間で認識する方法について発表した。B.M. Jonesは、平行投影光学系を用いて得られる2方向（またはそれ以上の方向）からの画像を解析して、物体の大きさ、位置、姿勢を認識する方法について述べた。（出沢）

「リモートセンシング」 テクスチャを用いた分類法等が報告されたが、特に新しいものはなく、この分野の画像処理研究は飽和した感がある。今後は、物理計測（digital terrain model, atmospheric effect, spectral reflectanceのmodel等）との関連において画像の持つ情報を明確にする努力が必要であろう。一方、航空写真関係ではautomatic navigation, target detection, image data baseに関する研究も報告されており、こゝには人工知能にも関係が深く、社会的要求も強いことから、今後にも活発に研究されるであろう。（松山）

「画像モデル（image modeling）」 まず、テクスチャ解析では、統計的手法と構造的技法の組合せによるnatural textureの解析が2件発表された。この方向に与えられるテクスチャのモデル構成は、心理学的なものも含めて今後も盛んに研究される。画像生成モデルは各種の報告があったが、特に注目すべきものはなかった。画像処理におけるオペレータの性能評価という観点からの画像生成モデルの研究が望まれる。C.H. ChenのVoronoi polygonの応用に関する研究は、実験例は無いがかなり有望な方法と言えよう。なお、Voronoi polygonも含めて、いゝかのComputational Geometryは、最近活発に研究されている。その目的は、空間的パターンの構造化、及び、効率的な処理アルゴリズムの開発にあり、今後の研究の進展が大いに期待される。詳細は、本会議の別のセッションにおけるG.T. Toussaintの解説に述べられている。（松山）

「テクスチャ解析」 テクスチャ境界検出、coarseness、テクスチャ合成、に関する研究が発表された。こゝではほとんど統計モデルに基くものであるが、今後は、単なる統計的手法のみでなく、心理学的特徴との関係や3次元物体の形状とテクスチャの関係、等を重点的に調べていく必要がある。なお、後者の例として、本会議におけるK. Ikeuchiの発表がある。（松山）

「イメージプロセッシング、その他全般」 画像処理の各種の方法が発表されたが、方法自身にはとりたてて新しいものはなかった。range dataをイメージプロセッシングの対象とした研究が発表されたが、むしろ、この新しい情報が3次元情景の解析にどのような形で寄与できるかが問題になる。

なお、全体的に、単なる画像処理のための研究では現在以上に大きな進展は望めないように思われる。今後は、3-D Analysis, stereo vision, motion analysisなどが研究の主流になるのではないだろうか。特に米国では、最近roboticsの研究が脚光を浴びており、こうした産業界の要望の強い研究も強力に進められる。（松山）

「医学応用」 全部で2件（西沢は、CT関係4、X線像3、RI像3、超音波3、顕微鏡像5、波形解析3）である。以下、外国の発表で筆者の興味を惹いた

ものをあげる。E.L.Hall らのCT像の強調は、成分図形を認識して各成分ごとに強調を試みた点で、簡単ではあるがパターン認識の組込みとして興味深い。Bajcsy らはCT像の画質改善に“知識”の利用を試みたが、従来の方法と比較しての有効性はまだ疑問。X線関係では、Skalsky の解説が自らのグループの研究の総括としてそれだけの意義がある。Shani の発表はAI的発想で人体器官の3-Dモデルの構成を試みたもので、臨床的意義はともかく3-D画像処理の意欲的試みを評価したい。上記2者ともアプローチは異なりが3-Dモデルを意識しているのは必然的傾向か。顕微鏡像では、Fennie らの細胞像の移動を映画フィルム上で追跡、解析する研究が、知識の利用と確率模型がうまく組合わさってよくまとまっていた。医用画像処理は、応用対象には事欠かないので一定量の研究は今後も続くであろうが、方法論的刷新しさ、または、応用上の有効さを裏付ける十分な実験(理想的にはその両方)が要求される新しい分野である。今回の発表の多くも、この点では物足りなかった。CT像、細胞像の処理は、むしろ、それ以外の固有の学会の方に、パターン認識の観点からもすぐれたものが見られるようである。(鳥羽)

【ソフトウェア・プログラミング】 招待講演1件を含めて8件の発表があった。Tanimoto の解説はソフトウェア工学の成果でパターン認識に関連しそうな話題の紹介で参考にしたい。Tou らのシステムUNIPSは筆者の考えるアルゴリズムデータベースの上に構成された画像処理プログラム生成システムであり、プログラムパッケージ開発の次のステップとして興味深い。Gelsema らの会誌的パターン分類のソフトウェアISPAN の紹介は、国内においてもこの種のソフトウェアの開発の必要性を感じさせる。Duin らの発表は、オランダのVerhagen のグループのシステムの紹介であった。なお、他のセッションで、Leviardi による画像処理用語PIXALの発表もあった。全般に、計算機工学の発展と密接に関連した研究ソフトウェア面ではデータ構造、仕様記述、アルゴリズム検証、言語、等、ハードウェア面では各種専用プロセッサ、アーキテクチャ等、一の研究は非常に盛んであり、今後も益々活発になるものと思われ。(鳥羽)

【その他】 上記諸項目の他にも、方法論的には、セグメンテーション、図形特徴、マッチング、フィッチリニング、エッジ検出、緩和法、等、応用面では、工業応用、テキスト処理、等、装置及びツールとして各種プロセッサ、アルゴリズム、システム、等に関する多数の発表があったが、すべて割愛する。特別講演では、米国の経済及び科学政策の状況に関するもの、及び、工業ロボットに関するものがあった。それらの中で日本がたがたが引合いに出されたのは、“経済大国との経済戦争”の反映かもしれない。後者については、Time誌(780.12.9)の特集記事“The Robot Revolution”が参考にしたいであろう。パターン認識は、機能(メカニズム)の解明及び人間並みの機能の実現という意味では依然として解決には程遠く、一方、個別技術としては、任意の情報システムの一エレメントとして必要なら自由に組込んで利用できる状態になりつつあることが感じられた。(鳥羽)

3. プログラムの詳細

次頁以下に、プログラムの全件、及び、論文数、参加者数の表を示す。論文表は、p.1の表中のカタログ番号によって米国IEEEより入手できる。

Registration (8:30-9:30)

Opening Session (9:30-10:00)

Remote Sensing American West (10:00-12:00)

Chairman: M. Nagao, Japan
Co-Chairman: G. Nagy, USA
(1) Application of PRIP in Remote Sensing, G. McMurtrey, USA

A Survey of Image Processing Developments in Support of Remote Sensing, B.F. Bauer, USA

Classification of Remote Sensed Data by Texture and Shape Features in Different Spectral Channels, B. Borge, Germany

Analog and Digital Processing of Aerial Images, R.Y. Wong, USA

Pattern Recognition of Waveforms Using Modern Spectral Estimation Techniques and its Application to Earthquake/Explosion Data, H. Stark, and S. Sarna, USA

Speech Recognition American North (10:00-12:00)

Chairman: S. Levinson, USA Co-Chairman: R.L. Kashyap, USA
(1) A Thousand Word Recognition System Based on the Learning Subspace Method and Redundant Hash Addressing, T. Kohonen, Finland

ARIAL II: System for Speech Recognition, G. Peremou, France

Feature Extraction for Automatic Speech Recognition, P.V. Collins, England

Noise Cancelling in Speech Processing: A Prelude to Feature Extraction, D. Lu, A.M. Smith, and D.G. Childers, USA

Automatic Pitch Measurement, H.S. Tan, and J.T.W. Damen

Application of a Weighted Least Squares Algorithm to Writer and Speaker Recognition, R.D. Naske, Germany

Advances in Speech Recognition, M. Zagoruiko, USSR

Line Drawing and Contour Analysis Palace (10:00-12:00)

Chairman: G.T. Toussaint, Canada Co-Chairman: P.W. Becker, Denmark

On the Freeman's Conjecture about the Chain Code of a Line, L. Wu, China

A Generalized Distance Transformation of a Line Pattern with Grey Values and its Applications, J. Toriwaki, M. Tanaka and T. Fukumura, Japan

Representation and Storage of Contour Map Data and Their Application to Weather Map Data, D. Montuno, T. Fukumura and Y. Yoshida, Japan

Study of a Model for Description Classification and Identification of Bi-Dimensional Contour Edges, D. Suraqui, Israel

Fourier Domain Design of Line and Edge Detectors, H. Knutsson and G.H. Granlund, Sweden

Relaxation and Labeling Orpheum (10:00-12:00)

Chairman: A. Rosenfeld, USA Co-Chairman: S.W. Zucker, Canada

On The Foundations of Relaxation Labeling Processes, S.W. Zucker, Canada and R.A. Hummel, USA

Monitoring Relaxation Algorithms Using Labeling Evaluation, S. Peleg, USA

An Analog Relaxation Processor, C.R. Dyer, and C.R. McLean, USA

Overcoming Accuracy Deterioration in Pixel Relaxation, D.A. Landgebe, J.A. Richards, and P.H. Swain, USA

A Directed Graph Search of Image Creation, G. Tang, USA

Nearest Neighbor Techniques Lyceum (10:00-12:00)

Chairman: P.A. Devijver, Belgium Co-Chairman: D.C. Cooper, USA
(1) On the Edited Nearest Neighbor Rule with the Resolution of a Controversy, P. Devijver, Belgium and Josef Kittler, England

A New Nearest Neighbor Distance Measure, R.D. Short and K. Fukunaga, USA

Convex Hull Nearest Neighbor Rule, E. Backer, H.P.A. Haas and L.J. Boerma, Netherlands

There Goes the Neighborhood—an Alien Identification Approach to Recognition in Partially Exposed Environments, B.V. Dasarthy, USA

The Concept of the NN Error Risk with Respect to an Arbitrary Separating Surface and its Applications to Clustering, E. Paulus, West Germany

A Single Nearest Neighbor Rule with a Reject Option, D.L. Wilcox and D.L. Wilson, USA

Some Properties of the k-Nearest Neighbor Rule, L. Devroye, Canada

General Applications I American West (2:00-6:00)

Chairman: I.D. Landau, France Co-Chairman: R.M. Hord, USA
Application of Pattern Recognition Techniques in the Identification of Acoustic Emission Signals, C.Y. Sueh, D.R. Hay, W.Y. Chang, and D. Schwelb, Canada

An Application of Pattern Recognition Techniques to Monte Carlo Radiation Transport Problems, T.J. Hoffman, USA

Automation of Reactor Monitoring Systems by Means of Pattern Recognition Techniques, E. Saender, Germany

Pattern Recognition Techniques in Sodium Cooled Fast Breeder Reactor's Acoustic Signal Analysis, M. Val, M. Brunet, and B. Dubuisson, France

Surveillance of a Nuclear Reactor by Pattern Recognition Analysis of the Neutronic Power Signal, I. Orignon, J. Gourdon, and B. Dubuisson, France

Application of Pattern Recognition Techniques to Radar Signature Classification, N.F. Esqueria, USA

Recognition System for Design Chart Drawn on Section Paper, T. Masui, S. Shimizu, M. Yosida and T. Abe, Japan

A System Model for Imaging Radars and its Application to Minimum Mean Square Filtering, V.S. Frost, J.A. Siles, K.S. Sharmugan, and J.C. Holtzman, USA

Pattern Recognition Technique for Characterization and Classification of Acoustic Emission Signal, P. Bae, A. Chazari, P. Gallard and J.F. Chretien, France

Analysis of Eddy-Current Data Using Pattern Recognition Methods, T.P. Harrington and P.G. Doctor, USA

Pattern Recognition and Generalized Production Systems in Strategy Development, N.V. Fandler, USA

Automatic Guidance of Vehicle Using Visual Data, D. Guentri and L. Norton-Wayne, England

Identification of Packaged-in-A-Box Goods for Designing a Part of an Intelligent Cash Register, Y. Okawa, Japan

On Patterns in Listings of Numerical Values Especially Failure Rate Values, P.W. Becker, Denmark

Panel: Speech Understanding Systems American North (2:00-4:00)

Organizer and Moderator: R. Reddy, USA

Co-moderator: G. While, USA

Panelists: J. Baker, USA, N.R. Dixon, USA, J-P. Haton, France; B. Lowerre, USA; V. Zue, USA; F. Itakura, Japan; Y. Kato, Japan

Image Transformations Palace (2:00-3:30)

Chairman: I. Dinstein, Israel Co-Chairman: S. Shapiro, USA

Two Dimensional, Fast Transformations with High Degree of Completeness for Translation Invariant Pattern Recognition Problems, H. Burkhardt, X. Muller and H. Schutte, West Germany

Experience with the Generalized Hough Transform, K.R. Sloan, Jr., and D.H. Ballard, USA

Walsh-Hadamard-Harr Hybrid Transforms, D. Huang, China

Computer-Aided Design of a Pie-Implemented Fast Walsh-Hadamard Transform Device, E.G. Smith, USA

A Pseudo-Cosine Transform for Hexagonal Tessellation with an Hierarchical Organization, J.-P. Crettez, France

Scene Matching with Translation Invariant Transforms, J. Schroder, H. Schutte, S. Frydychowicz, West Germany

Panel: Image Understanding Palace (4:00-6:00)

Organizer and Moderator: L. Druifei, USA

Co-moderator: A. Rosenfeld, USA

Panelists: T. Binford, USA; R. Nevatia, USA; R. Reddy, USA; J. Tenenbaum, USA; P. Winston, USA

Image Matching and Analysis Orpheum (2:00-3:30)

Chairman: R.M. Haralick, USA Co-Chairman: M. Idesawa, Japan

(1) Algorithms for Inexact Matching, L.G. Shapiro and R. M. Haralick, USA

Fast Matching of Non-Stationary Images with False Fix Protection, W. Frei, T. Shibata and C.C. Chen, USA

Hierarchical Graphs in Pattern Analysis, H. Nieman, West Germany

Matching of Natural Terrain Scenes, D. Conti, C.S. Clark, W.O. Eckhardt, T.A. McCulloh, R. Nevatia and D.Y. Tseng, USA

Elastic Matching of Line Drawings, D.J. Burr, USA

Profile Matching by Monotone Cubic Interpolation, D. Rutovitz, England

Panel: Structural and Statistical PR Orpheum (4:00-6:00)

Organizer and Moderator: T. Pavlidis, USA

Co-moderator: J. Kittler, England

Panelists: J.P. Hapon, France; K.S. Fu, USA; J. Mundy, USA; H. Niemann, Germany

Automatic Inspection American West (8:30-12:00)

Chairman: N. Caplan, USA Co-Chairman: L.F. Pau, France

(1) Visual Inspection of Metal Surfaces, G.B. Porter and J.L. Mundy, USA

Integrated Testing and Algorithms for Visual Inspection of Semiconductor IC's, L.F. Pau, France

Analysis by Synthesis Search for Semantic Segmentation Applied to Workpiece Recognition, H. Trops, Germany

Automatic Visual Sorting Method of Compressors with Stamped Marks, A. Komuro and K. Edamatsu, Japan

Tuesday, December 2, 1980

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- An Automated Process for Electronics Scheme Analysis,**
G. Stamon, and B. Zavidovique, France
(L) **A Syntactic Statistical Approach to Recognition of Industrial Objects,** K.S. Fu and W.H. Tsai, USA
Simplified Model-Based Part Locator, W.A. Perkins, USA
Automatic Inspection and Orientation of External Screws,
R. Horaud and J.P. Charrais, France
Automated Inspection Using Gray-Scale Statistics, S. Barnard, USA
Automatic Inspection of LSI Photomasks, Y. Hara, K. Okamoto, T. Hamada, K. Nakagawa, S. Torisawa, S. Nakashima, Y. Yabuhara, and N. Akiyama, Japan
Hardware Concepts and Systems
Chairman: M.J.B. Duff, England Co-Chairman: E.A. Parrish, USA (8:30-12:00)
A Fast Picture Processor Designed to be Programmed in a High Level Language, P.R. Wavish, England
ILION—A Spatial Logic Array for the Simplification of Window Patterns Observed in a Pyramid, T. Ichikawa, M. Hirakawa and T. Tamura, Japan
A Low Level Architecture for a Real Time Computer Vision System, D. Sherdell, USA
The Time-Shared Bus—Key to Efficient Image Processing, P. Danielsson, Sweden
Lay-Planning, M.J.B. Duff, England
Computer Analysis of Motion Using a Network of Processors, R. Jain and D.P. Agrawal, USA
(L) **Multiprocessor Implementation of Image Pattern Recognition,** P.H. Swain, J. El-Achkar and H.J. Siegel, USA
A Hardware Graphical Processor Based on a Logic Integration Algorithm, A. Oostelink, J. DeRoo, J. Van Daele, and H. Van Den Bergh, Belgium
Multiprocessor Architecture Adapted to the Parallel Treatment of a Continuous Flow of Data, D. Dours and R. Faccia, France
Real-Time Implementation of Digital Image Filters by Cascaded 3 x 3 Convolutions, J. VanDaele, Belgium
FLUP: A Flexible Multiprocessor System for Image Processing, P. Germain, H. Ischert and K. Luefjen, Germany
Scene Analysis and Interpretation Palace (8:30-12:00)
Chairman: E. Riseman, USA
Co-Chairman: B. Neumann, W. Germany
Considerations about Knowledge-Based Image Interpretation, W. Kastner, Germany
Knowledge-Based Recognition System of Weather Charts, R. Taniguchi, E. Kawaguchi, M. Yokota and T. Tamai, Japan
Knowledge-Directed Recognition: A Syntactical Approach, R. Mohr and G. Masini, France
An Application of Knowledge Base for Image Analysis, H. Ogawa, S. Kuroka, T. Kitahashi and K. Tanaka, Japan
The Integration of Multi-Sensor Data for Threat Assessment, T.D. Garvey and M.A. Fischer, USA
An Iterative Approach to Region Growing, W.E. Snyder and A.E. Cowart, USA
(L) **Semantic Description of Aerial Images Using Stochastic Labeling, K.E. Price and O.D. Faugeras, USA**
- Structural Encoding of Linear Outline in Scene Analysis,** M. Leroi and M. Bourton, France
Computer Analysis of Speckle Shearing Images, O.R. Mitchell, E.J. Delp, T.P. Wallace, and W.K. Cudwiler, USA
Image Understanding via Geometric Models, D. Lowe, T.O. Birtford, and R.A. Brooks, USA
Extraction of Vanishing Point and Its Application to Scene Analysis Based on Image Sequence, H. Nakatani, S. Kimura, O. Saito, and T. Kitahashi, Japan
Biomedical Applications I Orpheum (8:30-12:00)
Chairman: D. Ruvoitz, Great Britain Co-Chairman: C.C. Li, USA
(L) **Medical Radiographic Image Processing,** J. Sklansky, USA
Detection and Tracking of Blood Vessels in Chire-Angiograms, T. Fukui, M. Tachida and S. Tsuji, Japan
Accurate Measurement of Two Flow Velocities Using Image Correlation, E.L. Hall, F.A. Sadjadi, J.J. Hwang and M.J. Roberts, USA
3-D Reconstruction of Objects from Incomplete Data & A-Priori Knowledge, C.J. Tsikos and R.K. Bajcsy
A Computer Analysis of Mammographic Microcalcifications: Global Approach, W.G. Wee, USA
(L) **Cell Tracking: A Modeling and Minimization Approach,** S.W. Zucker, F.P. Ferre and M.D. Levine, Canada
(L) **Determination of Heart Dynamics from X-Ray and Ultrasound Image Sequences,** K.H. Honne, M. Boehm and U. Obermoeller, Germany
The Mathematical Methods of the Image Reconstruction for the Fan Beam Scanning, K. Wang, China
Regional CT Image Enhancement, E.L. Hall, J.J. Hwang, and W.J. W.J. Nalesnik, USA
Recognition of Filtered, Incomplete and Overlapping Patterns in Patients with Visual Agnosia and Hallucinations, J.M. Tonkonogy and C.L. Biber, USA
Clustering and Learning Lyceum (8:30-12:00)
Chairman: H. Stark, USA Co-Chairman: E. Diddy, France
(L) **Clustering in Pattern Recognition,** E. Diddy, G. Govaert, Y. Lechevallier, and J. Sidi, France
A New Nonlinear Mapping Algorithm and Its Application to Dimension and Cluster Analyses, O. Kakusho and R. Mizoguchi, Japan
Clustering by Connected Components in O(n)² Expected Time, P. Lehart and P.A. Duijver, Belgium
Clustering and Visualization of Patterns in A Psychiatric Data Base, G.A. Coffman, J.E. Mezrich and J.S. Strauss, USA
Cluster Methods for Error Detection and Estimation in Data Sets, M.N. Murty and G. Krishna, India
CLASSY: An Adaptive Clustering Algorithm, M.E. Rassbach, USA
What the Fourier Transform Can Really Bring to Clustering, G.E. Lowitz, France
Learning Algorithms Applied to the Recognition of Rigid Objects, E. Persoon, Netherlands
Learning, Assisted Learning, and Self Learning Procedures in Shape Classification, R. Lopez De Mantara, and J. Aguilar-Martin, Spain
- NEOCOGNITRON: Self-Organizing Network Capable of Position-Invariant Recognition of Patterns,** K. Fukushima, and S. Miyake, Japan
General Applications II American West (2:00-3:30)
Chairman: M. Baird, USA Co-Chairman: P.R. Wavish, England
Pattern Recognition Techniques in Cloud Research Part I: Feature Extraction and Selection, E.A. Quinby, M.M. Rahman, R.G. Jacquot, and M.J. Magee
Pattern Recognition Techniques in Cloud Research—Part II: Application, M.M. Rahman, R.G. Jacquot, E.A. Quinby, and R.E. Stewart
Fingerprint Card Search Results with Ridge-Contour Based Classification, A.S. Rabinowitz, USA
Texture Analysis of Digitized Fingerprints for Singularity Detection, T.L. Chang, USA
Minutiae Based Fingerprint Registration, F. Pernus, S. Kovacic and L. Gvergyek, Yugoslavia
Edge Processing Toward Detection of Minutiae in Fingerprints, M.A. Ismail and T.R. Reddy, India
Panel: Shape Description and Analysis American West (4:00-6:00)
Organizer and Moderator: H. Freeman, USA
Co-moderator: S. Levialdi, Italy
Panelists: T. Pavlidis, USA; L. Davis, USA; A. Guzman, Mexico; R. Cederberg, Sweden
Processors and Algorithms American North (2:00-3:30)
Chairman: S. Levialdi, Italy Co-Chairman: S. Tanimoto, USA
FIIP—the PICAP II Filter Processor, B. Kruse, B. Gudmundsson and D. Antonsson, Sweden
The GOP: A Fast and Flexible Image Processor, G.H. Granlund, Sweden
A Structured Image Processing Computer System, A.P. Reeves, USA
A New Model for Parallel Processing of Serial Images, C.C. Li and J.S. Tothunter, USA
Parallel Algorithms for the Two-Dimensional FFT, L.J. Siegel, Philip T. Mueller and H.J. Siegel, USA
Image Correlation Using Parallel Processing, L.J. Siegel, H.J. Siegel and A.E. Feather, USA
Panel: Special Architecture for PRIP American North (4:00-6:00)
Organizer and Moderator: K.S. Fu, USA
Co-moderator: K. Tanaka, Japan
Panelists: M.J.B. Duff, England; R.M. Hord, USA; T. Ichikawa, Japan; S. Levialdi, Italy; K. Mori, Japan; J.L. Potter, USA; L. Uhr, USA
Image Segmentation Palace (2:00-6:00)
Chairman: J.M. Prewitt, USA
Co-Chairman: W. Kastner, W. Germany
Application of the Conditional Population-Mixture Model to Image Segmentation, S.L. Sclove, USA
Separation of Overlapping Particles by Iterative Method, M. Takagi and K. Sakaue, Japan

Initial Segmentation and House Analysis in Colour Aerophotographs. Y. Fukada, Japan

Object Guided Segmentation of Aerial Images. W. Kestner, M. Bohner, R. Scharf and M. Sles, Germany

Taxonomy and Segmentation of Textured Images. H. Wechsler, USA

Feature Selection by Space Invariant Comparison with Applications to the Segmentation of Textured Pictures. L. Abele, Germany

(L) **Theoretical Analysis of Edge Detection in Textures.** L.S. Davis and A. Mitche, USA

Adaptive Segmentation of Unique Objects. O.R. Mitchell and S.M. Lutton, USA

Segmentation by Texture Using Correlation. P.C. Chen and T. Pavlidis, USA

Edge Based Segmentation and Texture Separation. S. Grinakar, Norway

Segmentation of Two-Dimensional Electrophoretograms. H. Zimmer, H. Kronberg and V. Neuhoff, Germany

A Comparison of Some Segmentation Algorithms for Cytology. S. Ranade and J. Prewitt, USA

Texture Discrimination using Intensity and Edge Co-Occurrences. S.W. Zucker and D. Teropoulos, Canada

Biomedical Application II Orpheum (2:00-6:00)

Chairman: J. Sklansky, USA Co-Chairman: K.H. Hohne, Germany

(L) **Automatic Classification of Cervical Cells Using a Binary Tree Classifier.** K.S. Fu and Y.K. Lin, USA

Computer Graphics and a Stereotactic Device for Neurosurgery. M.L. Rhodes, USA

Shape Features for Cancer Cell Recognition. C.-J. Chen and Q. Shi, China

Pattern Recognition Analysis of the External Electromyogram Signal for Paralympic Labour Monitoring. B. Dubuisson and V. Nathalie, France

Piecewise Linear Detection of Boundaries in Chest Radiographs. J. Sklansky and F. Towfig, USA

(L) **A 3-D Model Driven System for the Recognition of Abdominal Anatomy from CT Scans.** U. Shani, USA

Pattern Recognition in Sleep Research. E. Othmer, S.C. Othmer, M.W. Vannier and P.M. Fishman, USA

Automated Recognition of Line Structures on Noisy Raster Images Applied to Electron Micrographs of DNA. P.T. Speck, W. Germany

Development of a Database and Computer Aided Screening System of Chest Phototulograms. J. Hasegawa, J. Toriwaki, T. Fukumura, and Y. Takagi, Japan

A Pattern-Directed Approach to Signal Analysis. A.C. Sanderson and J. Segen, USA

Decomposition of Shape Boundaries in a Problem of Map Sequence Processing. G.G. Pieroni, Germany

Computer Analysis of Mammographic Microcalcifications: Global Approach. W.G. Wee, S. Fox, U. Pujare, M. Moskowitz, and R.V.P. Hutter, USA

Pattern Analysis in Cardiac Scintillation Camera Images. P. Cahill and R.J.R. Knowles, USA

Decision and Discrimination Theories Lyceum (2:00-6:00)

Chairman: R. Mizoguchi, Japan Co-Chairman: L. Gernhardt, USA

(I) **PRIP Theories.** G. Sardis, USA

A Nonparametric Multiclass Partitioning Method for Classification. D.E. Gustafson, S. Gelland and S.K. Mitter, USA

An Automated Approach to the Design of Decision-Tree Classifiers. R. Chin, P. Beaudet, P. Argenteo, USA

(L) **A New Algorithm for Constructing Piecewise Linear Discriminant Functions.** R. Mizoguchi, O. Kakusho and M. Shimura, Japan

Optimal Solution of Linear Inequalities with Applications to Pattern Recognition. R.C. Gonzalez and D.C. Clark, USA

Pattern Recognition Based on Piecewise Linear or Quadratic Discriminant Functions. D.F. Mx and F. Rahnbar, USA

Adaptive Decision Rules in Pattern Recognition Processes. A.B. Glaz and L.A. Rasargin, USSR

A Spectrally Preconditioned Threshold Logic Unit. J.E. Hershey, USA

Average Classification Accuracy Over Collections of Gaussian Problems. T.S. El-Sheikh and A.G. Wacker, Canada

Wednesday, December 3, 1980

Text Processing I American West (8:30-12:00)

Chairman: K. Tanaka, Japan Co-Chairman: M. Nadler, France

(I) **Advances in Recognition of Chinese Characters.** K. Mori and I. Masuda, Japan

A Pre-Processor for Handprinted Character Recognition. W.D. Wasson, Canada

Recognition of Handprinted Characters by Convex and Concave Features. K. Yamamoto, USA

An On-Line Procedure for Recognition of Handwritten Alphabetic Characters. I.D. Landau and W.W. Loy, France

(L) **Designing a Handwriting Reader.** D.J. Burr, USA

On Line Cursive Script Recognition: A Structural Approach with Learning. M. Bernhof and S. Ahyar, France

A Structural Method for Handprinted Alphanumeric and Other Symbols. N. Guangan, D. Jialu, G. Zhongcao and L. Jindao, China

Handwritten Arabic Character Recognition by the I.R.A.C. System. A. Amin, A. Kaced, J. Haton and R. Mohr, France

Automatic Pitch Measurement. P.C. Van der Kraak, H.S. Tan and J.T.W. Daman, The Netherlands

Programming and Software Systems

Chairman: B. Gudmundsson, Sweden Co-Chairman: J.T. Tou, USA

(I) **Advances in Software Engineering and Their Impact on PRIP.** S.L. Tanimoto, USA

A Programming Tool for Image Processing. W. Wilhelm, Germany

IPSEN—An Image Processing System for Environmental Analysis and Evaluation. Y. Yasuoka and T. Miyazaki, Japan

Use of Program Restructuring Techniques for Efficient Processing of Image Data in Paging Memory Systems. S.D. Shapiro, USA

UNIPS—A Universal Image Processing System. J.T. Tou and R.W. DeFree, USA

PUMAC—A Picture Understanding Machine. J.T. Tou, USA

(L) **On Automatically Generating Programs for Real Time Computer Vision.** D.A. Bourne, USA

Information Compaction, Memory Retrieval, Holographic Patterns, and Information Handling in the Nervous System. M. Witten, USA

The Application of ISPAHAN to Practical Problems. E.S. Gelsema, Netherlands

The Delta Image Processing System: Design and Use. R.P.W. Duin, F.A. Gertsen, F.C.A. Groen, P.W. Verbeek and C.J.D.M. Verhagen, Netherlands

Texture Analysis Palace (8:30-12:00)

Chairman: L. Davis, USA Co-Chairman: R. Ehrlich, USA

(I) **Textual Analysis in Image Processing.** R.M. Haralick, USA

Description of Texture Using the General Operator Approach. G.H. Granlund, Sweden

The Effects of Variability on Estimating Scale Change Using Texture. W.B. Thompson and C.L. Lemche, USA

Algebraic Reconstruction Techniques for Texture Synthesis. O.D. Faugeras and D.D. Garber, USA

(L) **Macrotexture and Microtexture.** J.M. Prewitt, USA

Visual Discrimination of Stochastic Texture Fields Based Upon Their Second Order Statistics. A. Gagolowicz, France

Real-Time Display of Textures. B.J. Schacter, USA

Autoregressive Modeling with Conditional Expectations for Texture Synthesis. O.D. Faugeras, USA

An Investigation of the Relation Between RADA Images and Visible Texture. L. Alexander and H. Kritikos, USA

Hierarchical Structures Orpheum (8:30-12:00)

Chairman: S. Chang Co-Chairman: E. Kawaguchi, Japan

(I) **Quadrees and Pyramids for Pattern Recognition and Image Processing.** A. Rosenfeld, USA

Using Quadrees to Smooth Images. M. Shneier and S. Ranade, USA

Quadtree Representations of Binary Images. H. Samet and A. Rosenfeld, USA

Hierarchical Structures and Complexities of Parallel Isometric Patterns—Generation and Parsing. P.S. Wang, USA

(L) **DF-Expression of Binary-Valued Picture and Its Relation to Other Pyramidal Representations.** E. Kawaguchi, T. Endo and M. Yokota, Japan

Fast Hierarchical Correlations with Gaussian-Like Kernels. P.J. Burt, USA

Fast Hierarchical Smoothing of Grey Tone Images with Adaptive Region Merging Capability. T. Ichikawa, M. Toho and Y. Tanaka, Japan

Covering Image Subsets With Patches. S.L. Tanimoto and R.J. Fowler, USA

Text Processing II American West (2:00-6:00)

Chairman: D.J. Burr, USA Co-Chairman: K. Mori, Japan

(I) **A Study of the Zero Letter OH Problem.** S. Mori, Japan and C.Y. Suen, Canada

Structural Codes for Omniscient and Handprinted Characters II. M. Nadler, France

An Application of the Modified Viterbi-Algorithm Used in Text Recognition. W. Dostler and J. Schurmam, West Germany

A Facsimile Based Manuscript Layout and Editing System by Auxiliary Mark Recognition, Y. Suenaga and M. Nagura, Japan
Page Processing the Merging of Text and Graphics, M.L. Bashor, USA

(L) Automatic Typewriter Identification, R.W. DePree, J.T. Tou, A. Nawaz and J.F. McCarthy, USA

Development of a High Performance Chinese Character Reader, S. Hirai and K. Sakai, Japan

Use of Pattern Processing Techniques for Transforming the Scale of Digital Print Fonts, R.G. Casey, T.D. Friedman and K.Y. Wong, USA

Boundary Approximation Using Wait² Series Expansion for Numerical Recognition, I.K. Sethi and G.P.R. Sarvaravudu, India
Structural Approach Applicable to the Primitive Description and Extraction for Complex Chinese Ideograph Recognition, S.T. Bow, China

Artificial Intelligence as Applied to Input and Output or Making Computers Read and Speak, A. Derfall, USA

Interactive Systems American North (2:00-3:30)
Chairman: L. Kanal, USA Co-Chairman: I. Oosterlinck, Belgium
An Interactive System for Program Assisted Design in Speech Recognition and Written Texts Processing, G. Gouarderes and B. Causse, France

An Interactive System for Quantitative Reading of Biomedical Images, T. Akatsuka, T. Kubo and O. Taketani, Japan
Graphic Displays of High Dimensional Vectors for Cluster Analysis, D. Naccarato, USA

A Study Applying Faces Method in an Interactive Pattern Recognition System for Waveform Analysis, N. Honda and S. Aida, Japan
A Hierarchical Storage Scheme with Moving Display Window for Interactive Image Processing, C. Lee, USA

User Level Concepts in an Interactive Picture Processing System, G. Gudmundsson, Sweden

Panel: Information Representation and Algorithms for Parallel Image Processing American North (4:00-6:00)

Organizer and Moderator: G.H. Granlund, Sweden
Co-Moderator: A. Rosenfeld, USA

Panelists: T.D. Garvey, USA; J.M.S. Prewitt, USA; E.M. Riseman, USA

Image Processing Techniques Palace (2:00-6:00)

Chairman: T. Ichikawa, Japan Co-Chairman: J.K. Aggarwal, USA
(L) Range Image Processing: Planar Surface Extraction, D.L. Milgram and C.M. Birklund, USA

Flir Image Enhancement for Automatic Target Cues System, C.M. Lo, USA

Image Processing Applications to Classification of Ambiguity Surfaces, J.B. Sharkey and M.H. Loew, USA

An Adaptive Filtering Approach of Digital Image Enhancement, J. Xu, China

The K-Forms—A New Technic and Its Application in Digital Picture Processing, A. Kaced, France

Pre-Similarity-Detection (PSD) Image Processing, R. Keller, A.T. Zavadsky and T.A. King, USA

Parameter Selection of Network Approximation of Images, S. Hsu and J. Mundy, USA

Approaches to Image Analyses of the Optic Disc, P.A. Nagin and B. Schwartz, USA

Target Segmentation in Infrared Images, W. Fiei and D. Brown, USA

Extraction of True Discontinuities on Weak Spatial Redundancy Images for Their Geometric Correction, R. Jeansoulin, France

A Theory of Design for Nonlinear Functions of Information Processing on Patterns, S. Kondo and M. Matsuo, Japan

Invariant Functions and Natural Transformations of Image Categories, M. Pavel, France

Decomposition of Image Sequences of Overlapping Homogeneous Transparent Radiating Objects, E.E. Gose, W.H. Rose, W.E. Barnes, E. Kaplan and J.S. Arnold, USA

Structural and Syntactical Pattern Recognition Orpheum (2:00-6:00)

Chairman: J. Mundy, USA Co-Chairman: K. Ikeuchi, Japan

Introduction of a General Data Model for Structural Pattern Recognition and a New Topological Analysis of Complex Two Dimensional Linear Patterns, A. Shouky, France

On The Efficiency of Syntactic Feature Extraction and Approximate Schemes for Data Compression, A. Apostolico, Italy

A Syntactic Representation of Two-Dimensional Patterns, P.S. Wang, USA

Structural Approach Applicable to the Primitive Description and Extraction for Complex Chinese Ideograph Recognition, S.T. Bow, China

Parsing Graph Languages, H.J. Ludwig, West Germany

(L) The Inference of Tree Systems Using Tree Derivatives and a Sample Strength Parameter, B. Levine, USA

Parallel Context-Free Array Grammar Normal Forms, P.S. Wang, USA

A Weak Algorithm for the Inference of String and Tree Grammars, R.E. Blake, UK

Attributed Parallel Tree Grammars and Automata for Syntactic Pattern Recognition, J.W. Tai, China

The Regular Expressions Inference for Syntactic Recognition of Handwritten Numerals, S. Zhang, China

Panel: Biomedical Applications Lyceum (4:00-6:00)

Organizer and Moderator: J. vanBommel, Netherlands

Thursday, December 4, 1980

Shape Analysis American West (8:30-12:00)

Chairman: T. Varnos, Hungary Co-Chairman: L. Shapiro, USA
(L) On the Convexity of Digital Regions, C.E. Kim and A. Rosenfeld, USA

Medial Lines and Figure Analysis, C. Acelli and G.S. di Baja, Italy

Shrinking of RC-Coded Binary Patterns, R. Cederberg, Sweden

Wave Wrapping, G.W. Zack, USA

(L) Shape From Regular Patterns (An Example of Constraint Propagation in Vision), K. Ikeuchi, Japan

Minimal Rectangular Partitions of Digitized Blobs, J. Sklansky, L. Ferrari, and P.V. Sankar, USA

Guessing Shape of a Polyhedron From an Imperfect Line Drawing, S. Ishikawa, Japan

Using Descriptors to Find Figures That Approximate Given Points, J.R. Siegle and J.K. Dixon, USA

Shape Discrimination with Walsh Descriptors, I. Dinstein and T. Silberberg, Israel

3-D Analysis American North (8:30-12:00)

Chairman: M. Levine, Canada Co-Chairman: R. Bajcsy, USA
(L) 3-D Scene Analysis and Image Understanding, R. Bajcsy, USA

(L) Hierarchical Representations for Serial Section Images, S.N. Sihar, USA

Matching Symbolic Descriptors for 3-D Reconstruction of Simple Moving Objects, B. Radig, B. Kraasch and W. Zack, Germany

3-D Shape Input and Processing by Maire Technique, M. Idesawa and T. Yataqui, Japan

3-D Complex Object Recognition Using Programmed Illumination, T. Varnos and M. Balogh, Hungary

Simple 3-D Assembly Using Parallel Projection Optics, P. Saraga and B.M. Jones, England

Image Modeling Palace (8:30-12:00)

Chairman: J.C. Simon, France Co-Chairman: T. McAndrew, USA
A Model for Texture Edges, E. Triendi and T. Henderson, West Germany

Random Field Models for Torus Lattices for Finite Images, R.L. Kashyap, USA

Conformal Computational Geometry for Machine Vision, G.M. Chakiri and C.F.R. Weiman, USA

Image Modeling the Continuity Assumption and Tracking, S.A. Rajala, W.E. Snyder and G. Hinzinger, USA

A Structural Description of Regularly Arranged Textures, T. Matsuyama, K. Saburi and M. Nageo, Japan

Random Process Models and Estimation Theory for Digital Image Registration, G. Nagy and W. Brogan, USA

(L) Dot Pattern Processing Using Voronoi Polygons, N. Ahuja, USA

On Two-Dimensional ARMA Models for Image Analysis, C.H. Chen, USA

Linear Filtering Models for Texture Classification and Segmentation, C.W. Thiem, USA

Unification of Mathematical Model Self-Organization Theory, A.G. Ivakhnenko, J.V. Koppa, N.A. Ivakhnenko and D. Lanlayova, USSR

Structural Description of Natural Textures, K.E. Price, F. Vilnrotter and R. Nevatia, USA

Coding and Filtering Orpheum (8:30-12:00)

Chairman: T. Huang, USA Co-Chairman: E.R. Davies, England
Image Coding System Using an Adaptive DPCM, S. Castan, L. Messip-Palmes and M. Baland, France

A New Method for the Compression of Binary Picture Data, E.R. Davies and A.P.N. Plummer, England

Coding Run-Lengths Using Static and Dynamic Fragmentation Algorithms, L. Ginn, USA

Digital Picture Interpolation, J.M. Chassery, France

Noise Filtering in Moving Images, T.S. Huang, USA

Two Dimensional Rank Filters: Deterministic and Spectral Properties, G. Heygster, Germany

Performance of Recursive Image Reconstruction Filters, J. Biemond and J.J. Gerbrands, Netherlands

Rotation Invariant Linear Operators With Directional Response.
P. Danielsson, Sweden
An Extension of Median Filtering and Its Deterministic Properties.
T. Kitahashi, S. Tatsumi, L. Abelle, F. Wahl and H. Marko, Japan
Removal of Noise from Binary Patterns. L. Norton-Wayne, England
Texture Discrimination Using Digital Deconvolution Filters.
S.N. Jayaraman, USA

Feature Analysis Lyceum (8:30-12:00)
Chairman: A. Jain, USA
Co-Chairman: E. Oja, Finland
The Dual Space and Its Use in Feature Selections. S.J. Roberts.
L.P. Henderson and R. Hanka, USA
Some Comments on the Subspace Methods of Classification.
E. Oja and J. Karhunen, Finland
Intrinsic Dimensionality of Ordinal Data. J. Quinqueton, France
Feature Extraction Method by Specialized Hadamard Transform.
K. Takahashi and T. Kishi, Japan
Generalized Distance Transformation on Digitized Binary Images
S. Yokoi, J. Toriwaki and T. Fukumura, Japan

Acoustic Emission Analysis Using Pattern Recognition.
T.P. Harrington and P.G. Doctor, USA
Parameter Estimation and Feature Extraction of Optimum Mean
Squared Estimation of the Bayes Risk. R.K. Lemington and
T.C. Minter, USA
Decision Tree Design for Pattern Recognition Including Feature
Measurement Cost. G.R. Datataya and V.S. Sarma, India
Recursive Construction of Karhunen-Loeve Expansions for Pattern
Recognition Purposes. E. Oja and J. Karhunen, Finland
Feature Extraction Model by Correlation. A. Tamaki, Japan
A Method for Construction of Complete Invariant Systems of
Features for Scene Analysis. S.V. Fogel and R.J.P. de Figueiredo,
USA
Symmetry of Karhunen-Loeve Systems and Its Application to
Geometric Pattern Analysis. T. Kamitama and I. Suzuki, Japan

Panel: Robotics and Automation American West
(2:00-3:30)
Organizer and Moderator. J.F. Jarvis, USA
Co-moderator: P. Saraga, England

Motion Analysis American North (2:00-6:00)
Chairman: H. Nagel, Germany Co-Chairman: J. O'Rourke, USA
(I) Analysis of Time Varying Imagery Through the Representation of
Position and Shape Changes. M.Q. Ward and Y.T. Chen, USA
Image Differencing for Moving Object Extraction in Dynamic
Scenes. J.K. Aggarwal, S. Yalamanchili and W.N. Martin, USA
Peripheral Processes in Machine Perception of Motion. R. Jain,
USA

(L) Tracking Jointed Objects. J. Webb and J.K. Aggarwal, USA
Motion Analysis in Natural Scenes Picked Up by a Moving Optical
Sensor. A. Korn and R. Kories, Germany
Automated TV Tracking of Moving Objects the DFVLR Tracker and
Related Approaches. G. Hinzinger, K. Lanzetta and W.E. Snyder,
USA

Motion Analysis of Image Sequences for Object Grouping and 3-D
Reconstruction. B. Newmann, West Germany

(L) Three Dimensional Motion Interpretation for the Sequence of Line
Drawings. M. Asada, M. Yachida and S. Tsuji, Japan

Panel: Entropy and Pattern Recognition Palace
(2:00-3:30)

Organizer and Moderator: S. Watanabe, USA
Co-moderator: C. Kuligowski, USA
Panelists: J. Sallantin, France; K. Hanakata, W. Germany;
J. Pearl, USA

Edge and Object Detection Orpheum (2:00-6:00)

Chairman: E. Person, The Netherlands
Co-Chairman: D.L. Milgram, USA
(L) Toward a Theory of Multiple-Window Algorithms for Fast Adaptive
Boundary Finding in Computer Vision. D.B. Cooper, P. Schenker
and F. Sung, USA
Expressing Edge Extractors. S. Levialdi, M. Isoldi and G. Uccella,
Italy

An Approach to Edge Detection and Representation by Two
Knowledge-Free Techniques. A. Osorio and A. Ikonomopoulos,
France
Edge Preserving Smoothing With Edge Confidence Threshold.
J.S. McDonald, USA

Evaluation of Edge Detection Algorithms Applied to Nuclear
Medicine Images. P. Cahill, B.J.R. Knowles, O. Tsens,
T. Lowinger and R. Pousapnya, USA

Boundary Detection in Range Pictures. R. Nevatia and S. Indukuchi,
USA

An Adaptive Operatorset. L.E. Nordell and B. Kruse, Sweden
A Parallel Window Estimator for Object Boundary Finding in Noisy
Images. P.S. Schenker, D.B. Cooper and K.M. Wong, USA
Optimal Computation of Image Gradients Using Eigenvector
Techniques and 3 x 3 Neighborhoods. W.E. Snyder and
I-Sheng Tang, USA

Object Detection in Image Sequences. K.H. Bers, M. Bohner and
H. Gerack, Germany

Local Image Continuity Measure and Its Application. M. Aoki, Japan
Geometric and Statistical Methods Lyceum (2:00-6:00)

Chairman: C.H. Chen, USA Co-Chairman: A.G. Ivakhnenko, USSR
(I) Pattern Recognition and Geometric Complexity. G.T. Toussaint,
Canada

Method of Pattern Recognition Based Upon Approximation of Dis-
tribution by Mixtures. I.A. Buračov, G.T. Volosin, and
S.T. Kosenkova

Adaption of Parallel Hyperplanes for Solution of Two-Class-
Problems Minimizing an Extended Performance Function.
G. Stanke, Germany

Statistical Discrimination Using Inaccurate Models. D. Kazakov,
USA

(L) Stochastic Models for Closed Boundary Analysis: Part 1 Repr-
sentation and Reconstruction. R.L. Kashyap and R. Chellappa,
USA

An Analysis of the Bayesian Inductive Processes. J. Sallantin and
T. Van der Pyl, France

Constructive Invariant Coupling Method and Some Applications
Thereof for Solving Problems of Statistical Sequential Analysis

and Synthesis of Decision Rules at Discrimination of Com-
posite Hypothesis. N.A. Nepoch, USSR
Extrapolative Methods of Error Probability Estimation.
K.S. Sharmugam, USA

Estimation of Probabilities of Label Imperfections and Correction
of Mistakes. C.B. Chittineni, USA

On the Possibility of Avoiding Peaking. R.P.W. Duin and B.J. Krose,
Netherlands

(I) — Invited Paper
(L) — Long Paper

Austria	1	0
Belgium	3	3
Canada	22	7
China	6	11
Denmark	2	1
England	13	10
Finland	2	3
France	43	29
East Germany	2	0
West Germany	42	28
Holland	9	8
India	1	4
Israel	2	2
Italy	9	3
Japan	36	35
Mexico	1	0
Norway	1	1
Spain	1	1
Sweden	12	8
Switzerland	2	0
U.S.A.	396	144
U.S.S.R	0	5
Yugoslavia	1	1
Hungary	1	1
	608	305

数字左側は参加
人数、右側は会場に
おける発表数による。
数字右側は発表
論文数。IAPR
Newsletter 3, 3,
Oct. 11のページ
を一部修正。

コンピュータビジョン研究連絡会

◇昭和56年度の研究会開催予定

昭和56年度の予定は次の通りです。

56年5月14日(木) 於豊橋技科大

7月 於九州芸工大(福岡)

9月 於日本IBM
東京サイエンスセンター

11月 筑波

57年1月 関西(阪大or京大)

3月 東京

(学会全体の予算案が未決定のため、
若干変更することもあります。)

発表希望者は従来通り、開催月の前々
月5日頃までに代表幹事または学会事
務局研究会係まで申し込んで下さい。

また、5,7,1月は電子通信学会・P
RL研究会に帯同して地方で開催しま
す(共催ではありません)。その他も、
基本的には同研究会の前日に行なうの
で、各月20日前後の木曜日の予定です。

◇第12回画像工学コンファレンス

恒例の画像工学コンファレンスは、
本年は12月10、11日に、昨年同様、農
協ホール(東京・大手町)で開催され
る。

このコンファレンスの特色の1つは
ポスターセッションで、一般講演に比
べて発表時間が長くとれ(論文集掲載
は同じ4ページ)、かつ活発な討論が
行なわれるため、この形式の発表を増
やして行く方針とか。

論文募集及び開催案内は、追々この
欄に掲載する予定。

◇SPIDERの配布停止

前回のこの欄での予告通り、電総研
の計算機事情によりソフトウェア・パ
ッケージSPIDERの配布が停止さ
れる。コピー済のMTのストックの消

化と、既配布先へのコピー依頼により
しばらくは対応されるが、事務量が膨
大なため電総研では再開の予定なし。
今後の運営(プログラムの収集・新規
作成、マニュアル改訂等)も含めて、
外部委託が検討されている。

2月末現在、配布先は94グループ。
その後も問い合わせが10件以上あるの
で、100件突破は時間の問題!! これ
までのところ、大学、中立的機関、
民間企業の比率はほぼ2:1:2の割
合である。



◇標準画像データベース

東大生研で収集・配布されているS
I D B AのVol. 5, Vol. 6が編集され、
4月中旬頃より公開される。(ただし、
両方でMT11巻もの大データベース。)

S I D B Aの方は、既に120ヶ所以
上の配布実績をもつ。米国では今頃にな
って、N I Hが中心となってデータ
交換のためのフォーマット決めを行な
っているという。自動車のみならず、
この分野でも日米間の実力差はとっく
に逆転か!?

◇新刊書案内

- 1) R.M.Haralick and J.C.Simon (eds.),
"Issues in Digital Image Processing"
NATO Advanced Study Institutes
Series E-34, 366p., Sijthoff &
Noordhoff, 1980.

(1978年6月、フランスの Bonas で開かれた)
セミナーの論文集。14編が収録されている。

- 2) M.Onoe et al.(eds.), "Real-Time Medical Image Processing", Plenum Press, 229p., 1980.

(1978年10月東京での日米セミナー発表論文の)
一部をまとめたもの。医用画像以外の話題は別刊。

- 3) E.S.Gelsema and L.N.Kanal(eds.), "Pattern Recognition in Practice", 552p., North-Holland, 1980.

(1980年5月 アムステルダムでの Workshop の)
発表論文集。41編の全てが practical は誤ではないが..

- 4) S.Tanimoto and A.Klinger (eds.), "Structured Computer Vision — Machine Perception through Hierarchical Computation Structures", 256p., Academic Press, 1980.

(副題から分かるように、ピラミッド構造愛好会)
の仲良レグルーフによる論文 or 解説7編と、
コメント2編よりなる本。

- 5) T.S.Huang (ed.), "Two-Dimensional Digital Image Processing I & II",
I. Linear Filters,
II. Transforms and Median Filters
230p. each, Springer, 1981.

(Huang 先生の Intro. に続き I. は4編、
II は5編の解説が入っている。)

- 6) テレビジョン学会編、"テレビジョン・画像工
学ハンドブック"、1448p, オーム社, 昭55。

(今回から「画像工学」の名を付しただけあ
ってTV以外の話題に、視覚、画像情報処
理、画像技術の応用などの章がある。画像
処理についての扱いは、むしろ「電子通信ハンド
ブック」や当学会編の「情報処理ハンドブック」
より、はるかに大きい。)

(文責: 田村)