

IGS2003 Program

Sunday, 2 November 2003

WELCOME RECEPTION and REGISTRATION (5:30 - 7:30 pm)

Monday, 3 November 2003

OPENING (8:10 - 8:30 am)

NOVEL DEVELOPMENTS

1. Neural Signals *Chair: John Soechting*

- 8:30 am Kevin WARWICK
Control of a Robot Hand and Other Applications Using Neural Signals through an Implant
- 9:30 am Jay ALBERTS, Christopher ELDER, Michael OKUN, and Jerrold VITEK
Impact of Deep Brain Stimulation on Force Control in Parkinson's Disease
- 9:50 am Rachael D. SEIDLER, Douglas C. NOLL, and Prudhvi CHINTALAPATI
Neural Substrates Contributing to Generalization of Aiming Movements
- 10:10 am Hanneke I. VAN MIER and Steven E. PETERSEN
Changes in Brain Activations during Sequential Motor Learning
- BREAK (10:30 - 10:50 am)** – Speakers and Chair Person meet at 10:40 am

FUNDAMENTAL RESEARCH

2. Fingers and Forces *Chair: Kevin Warwick*

- 10:50 am Sara WINGES and Marco SANTELLO
Motor Unit Synchrony and Force Coordination during 5-Digit Grasping
- 11:10 am Mark L. LATASH, Jae kun SHIM, Fan GAO, and Vladimir M. ZATSIORSKY
Two Control Processes Associated with Multi-Digit Prehension
- 11:30 am Michael P. CALIGIURI, Gregory G BROWN, Sandra S. KINDERMANN, MJ MELOY, Lisa T. EYLER-ZORRILLA, and James B. LOHR
Functional Brain Asymmetries During Unimanual Visuomotor Tracking
- 11:50 am Thomas E. JERDE, John F. SOECHTING, and Martha FLANDERS
Analysis of Errors in ASL Fingerspelling
- 12:10 am Bouwien C.M. SMITS-ENGELSMAN, Yvonne WESTENBERG, Roeland R. SMITS, and Gerard P. Van GALEN
Developmental Trends in Signal-to-Noise Ratios in Bimanual Isometric Force Control
- LUNCH (12:30 - 1:30 pm)** – Speakers and Chair Person meet at 1:20 pm

FUNDAMENTAL RESEARCH

3. Repetitive Patterns *Chair: George Stelmach*

- 1:30 pm Natalia V. DOUNSKAIA, Caroline J. KETCHAM, and George E. STELMACH
Arm Geometry and Sinusoidal Joint Movements Predict The Bell-Shaped Velocity and the Two-Third Power Law
- 1:50 pm Caroline J. KETCHAM, Natalia V. DOUNSKAIA, and George E. STELMACH
Control of Multijoint Drawing Movements: A Comparison of Young and Elderly Adults

2:10 pm Sylvie ATHÈNES, Isabelle SALLAGOÏTY, Jean-Michel ALBARET, and Pier-Giorgio ZANONE

Universal Features of Handwriting : Towards a Non-linear Model

2:30 pm Isabelle SALLAGOÏTY., Sylvie ATHÈNES, Pier-Giorgio ZANONE, and Jean-Michel ALBARET

Alterations of Graphic Production under Various Constraints Follow Principled Modifications in Underlying Pattern Dynamics

4. Feedback and Adaptation *Chair: George Stelmach*

2:50 pm Sima MISTRY and Jose L. CONTRERAS-VIDAL

Learning Multiple Visuomotor Transformations: Adaptation and Context-Dependent Recall

3:10 pm Florian A. KAGERER, Jin BO, Jose L. CONTRERAS-VIDAL, and Jane E. CLARK
Visuomotor Adaptation in Children with Developmental Coordination Disorder

BREAK (3:30 - 3:50 pm) – Speakers and Chair Person meet at 3:40 pm

COMPUTER INTERACTION

5. Handwriting Recognition *Chair: Sargur Srihari*

3:50 pm Moumita GHOSH and Ranadhir GHOSH

Offline Handwriting Recognition using Evolutionary Neural Learning Algorithm Based on Rule based Over Segmented Data Points

4:10 pm Simon GUENTER and Horst BUNKE

Off-line Cursive Handwriting Recognition - On the Influence of Training Set and Vocabulary Size in Multiple Classifier Systems

4:30 pm Tamas VARGA and Horst BUNKE

Effects of Training Set Expansion in Handwriting Recognition Using Synthetic Data

4:50 pm Cinthia O.A. FREITAS, Flávio BORTOLOZZI, and Robert SABOURIN

Study of Perceptual Similarity between Different Lexicons

5:10 pm Roger STEVENSON, James G. PHILLIPS, and Tom J. TRIGGS

Graphics Tablets as Cursor Control Devices II

CLOSING (5:30 - 5:50 pm)

RAWHIDE (6:30 - 10:00 pm)

Tuesday, 4 November 2003

OPENING (8:10 - 8:30 am)

FUNDAMENTAL RESEARCH

6. Models of Movement *Chair: Mark Latash*

8:30 am Daniel BULLOCK

From Parallel Sequence Representations to Calligraphic Control

9:30 am Anna WOCH and Réjean PLAMONDON

The Problem of Movement Primitives in the Context of the Kinematic Theory

9:50 am Jose L CONTRERAS-VIDAL and Shihua WEN

Predicting Functional Activation (Synthetic PET) and Kinematics during Visuomotor Adaptation to Distorted Kinematic Environments using a Neural Network Model

7. Workspace *Chair: Mark Latash*

10:10 am Bouwien C. M. SMITS ENGELSMAN, Hilda BLOEM VAN DER WEL, and Jacques DUYSSENS

The Impact of Workspace on Writing Performance: A Comparison between 6, 8 and 10 Year Old Children

BREAK (10:30 - 10:50 am) – Speakers and Chair Person meet at 10:40 am

POSTER SESSION: ORAL INTRODUCTIONS (10:50 - 12:10 pm) – 2-Minute Presentations

FUNDAMENTAL RESEARCH

8. Pen Strokes

Moussa DJIOUA and Réjean PLAMONDON

Relationship between Proportionality Law and Lognormality of a Coupled System Response

Kazuhiko KOBAYASHI

Estimate Kinematical Parameters of Finger and Wrist During Handwriting Movements by means of Short Line Segments Drawing

James G. PHILLIPS, Tom J. TRIGGS, Roger STEVENSON, and James W. MEEHAN

Independence of Perception and Action during Drawing?

Robert R.A. VAN DOORN, Hanneke I. VAN MIER, Pieter J.A. UNEMA, and Koen J.M. JANSSEN

The Effect of Instructed Dwell Time on the Performance of Successive Aimed Pen Movements

Hans-Leo TEULINGS and Arend W.A. VAN GEMMERT

Goal-Directed Movements in Menu Selection in Computer-User Interfaces

Diana H. ROMERO and Hans-Leo TEULINGS

Analysis in Goal-Directed Movements

Hans-Leo TEULINGS and Diana ROMERO

Submovement Analysis in Learning Cursive Handwriting or Block Print

Jules G. BLOEMSAAT, Gerard P. VAN GALEN, and Ruud G.J. MEULENBROEK

Activation Patterns in Forearm and Neck Muscles as a Function of Movement Speed and Memory Load

Joel REITHLER, Hanneke VAN MIER, and Gerard VAN BREUKELEN

Effects of Mental and Physical Practice in a Sequential Motor Learning Task

MEDICAL APPLICATIONS

9. Measuring Disorders

Gregory J. IMLAY and George E. STELMACH

Targeted Isometric Index Finger Force Production

Oliver TUCHA, Lara MECKLINGER, Geraldine M. PAUL, and Christian SMELY

Handwriting in a Patient with a Mass Lesion of the Left Frontal Lobe

Klaus W. LANGE, Oliver TUCHA, Astrid REITER, Lara MECKLINGER, Silke BIRZER, Gesine L. ALDERS, Heino SARTOR, and Marcus NAUMANN

Disturbances of Handwriting Fluency in Parkinson's Disease

EDUCATION AND DEVELOPMENT

10. Computer in schools

Iyad ZAAROUR, Laurent HEUTTE, Bassam ETER, Jacques LABICHE, Daniel MELLIER, Philippe LERAY, and Mohamed ZOAETER

A Probabilistic Modeling of the Writing Strategies Evolution for Pupils in Primary Education

Iyad ZAAROUR, Laurent HEUTTE, Bassam ETER, Jacques LABICHE, and Daniel MELLIER

A bayesian Network Model for Discovering Handwriting Strategies of Primary School Children

Oliver TUCHA, Sigrun RICHTER, and Klaus W. LANGE

Intention to Write and Handwriting in Children and Young Adults

Martin A. E. VAN HUYGEVOORT, Ludo VERHOEVEN, and Anna M. T. BOSMAN

Differences between Children's Handwritten Stories and Those Typed on a Computer

COMPUTER INTERACTION

11. On- and Offline Handwriting

John FEMIANI, Jeremy ROWE, and Anshuman RAZDAN

3D Analysis of Offline Signatures

Giovanni D'ANDRIA, Claudio DE STEFANO, Raffaella FOGLIA, and Angelo MARCELLI

An Algorithm for Handwriting Strokes Reordering

Alan HARVEY, Chandra WELIWITAGE, and Andrew JENNINGS

Word Spotting Using Evolutionary Search in Cursive Script

Chandra WELIWITAGE, Alan HARVEY, and Andrew JENNINGS

Use of Hough Transform for Handwritten Character Slant Detection

Jin-Young HA, Mina PARK, and Alain BIEM

A Study of Various Model Selection Criteria for HMM Topology Optimization

FORENSIC APPLICATIONS

12. Computer-Aided Analysis

Katrin FRANKE and Lambert SCHOMAKER

Pen Orientation Characteristics of Online Handwritten Signatures

Jodi C. SITA, Doug ROGERS, and Bryan FOUND

Spatial Comparison of Questioned to Specimen Signatures using Matrix Analysis Software

Sumit CHACHRA, Himanshu SAHANI, Vinod KUMAR, and H.K. VERMA

Adaptive Segmentation of On-Line Signatures

Matthieu WIROTIUS and Nicole VINCENT

Stroke inner structure invariance in handwriting

Hung-Chun CHEN, Sung-Hyuk CHA, Yi-Min CHEE, and Charles C. TAPPERT

The Detection of Forged Handwriting Using a Fractal Number Estimate of Wrinkliness

Graham LEEDHAM, Vladimir PERVOUCHINE, WeiKei TAN, and Arun JACOB

Assessment of the Stability and Usefulness of some Handwriting Features used by Document Examiners to Identify Authorship

A. BENSEFIA, T. PAQUET, and L. HEUTTE

Information Retrieval based Writer Identification

Takeshi FURUKAWA, Kazuhiko KOBAYASHI, and Yoko SEKI

The Reconstruction of Handwriting of Japanese Kana Characters using Velocity Profiles of Pen-Tip

GROUP PICTURE – In the Marriott Hotel Courtyard (12:20 – 12:30 pm)

LUNCH (12:30 - 1:30 pm)

POSTER SESSION & RESEARCHABLE QUESTIONS MARKET (1:30 - 3:30 pm)

BREAK (3:30 - 3:50 pm) - Speakers and Chair Person meet at 3:40 pm

MEDICAL APPLICATIONS

13. Diseases and Drugs *Chair: Stephen Grossberg*

3:50 pm Charles H. ADLER, Arend W. A. VAN GEMMERT, Hans-Leo TEULINGS, and George E. STELMACH

A Quantitative Analysis of the Production of the Archimedes Spiral in Parkinson's disease patients and Controls

4:10 pm Brandon ROHRER and Neville HOGAN

Submovement Overlap as a Measure of Movement Smoothness

4:30 pm Sam CHINDARO, Richard M. GUEST, Michael C. FAIRHURST, and Jonathan M. POTTER

Assessing Visuo-Spatial Neglect through Feature Selection and Combination from Geometric Shape Drawing Performance and Sequence Analysis

4:50 pm Klaus W. LANGE, Steffen ASCHENBRENNER, Tobias MEISSNER, and Oliver TUCHA

Nicotine and Handwriting

5:10 pm Oliver TUCHA, Lara MECKLINGER, Rainer LAUFKÖTTER, Geraldine M. PAUL, Helmfried E. KLEIN, and Klaus W. LANGE

Effects of Stimulant Medication on Handwriting in Children and Adults with Attention Deficit Hyperactivity Disorder

PRESENTATION OF THE INTERNATIONAL SOCIETY OF MOTOR CONTROL GRADUATE STUDENT AWARD (5:30 – 5:40 pm)

CLOSING (5:40 - 5:50 pm)

BANQUET (6:30 - 10:00 pm)

Wednesday, 5 November 2003

OPENING (8:10 - 8:30 am)

EDUCATION & DEVELOPMENT

14. Children and Learning *Chair: Daniel Bullock*

8:30 am Stephen GROSSBERG

How Do Children Learn to Write? Modeling the link from brain dynamics to complex sensory-motor control

9:30 am Eugene A.A. RAMECKERS, Bouwien C.M. SMITS ENGELSMAN, and Jacques DUYSENS
Influence of Visual Feedback on Force Generation and Force Control in Children with Spastic Hemiplegia during Isometric Manual Tasks

9:50 am Anneloes J.A.A.M. OVERVELDE, Bouwien C.M. SMITS ENGELSMAN, Mireille THE, and Wouter HULSTIJN

Implicit and Explicit Learning in Children with Learning Disabilities: A Comparison between Children scoring Low on the Perceptual Organization factor of the WISC-R and Children scoring Low on the Freedom From Distractibility factor.

10:10 am Sara ROSENBLUM, Shula PARUSH, Liora EPSZTEIN, and Patrice L. WEISS

Process Versus Product Evaluation of Poor Handwriting among Children with Developmental Dysgraphia and ADHD

BREAK (10:30 - 10:50 am) – Speakers and Chair Person meet at 10:40 am

COMPUTER INTERACTION

15. Segments and shapes *Chair: Réjean Plamondon*

10:50 am Claudio DE STEFANO, Gianluca GUADAGNO, and Angelo MARCELLI

A Decomposition Method for Cursive Handwriting based on Multi-Scale Representation

11:10 am Keisuke MOCHIDA and Masaki NAGAKAWA

Separating Drawings, Formula and Text from Free Handwriting

16. Signature Verification *Chair: Réjean Plamondon*

11:30 am Julio MARTINEZ-R and Rogelio ALCANTARA-S.

Optimal Prototype Functions of Features for On-Line Signature Verification

11:50 am Katrin FRANKE, Lambert SCHOMAKER, and Wolfgang PENK

Online Pen Input and Procedures for Computer Assisted Forensic Handwriting Examination

12:10 am Meenakshi K. KALERA, Bin ZHANG and Sargur N. SRIHARI

Off-line Signature Verification And Identification Using Distance Statistics

LUNCH (12:30 - 1:10 pm) – Speakers and Chairs meet at 1:20 pm

FORENSIC APPLICATIONS

17. Classical comparisons *Chair: Graham Leedham*

1:30 pm Marvin L. SIMNER, Angelo MARCELLI, Sergey ABLAMEYKO, Klaus W. LANGE, and Jairo ROCHA, and Oliver TUCHA

A Comparison of Arabic Numeral Allographs Written by Adults from English Speaking vs. Non-English Speaking Countries

1:50 pm Jodi C. SITA, Doug ROGERS, and Bryan FOUND

A Model using Complexity Classification, Spatial Score and Line Quality for Forensic Signature Comparison

18. Automatic Writer Recognition *Chair: Graham Leedham*

2:10 pm Zhixin SHI, Bin ZHANG, Catalin TOMAI, and Sargur N. SRIHARI

Recognition-based System for Handwriting Verification and Identification

2:30 pm Ajay SHEKHAWAT, Sargur N. SRIHARI, and Subir PARULEKAR

Individuality Studies for Online Handwriting

2:50 pm Bin ZHANG and Sargur N. SRIHARI

Handwriting Identification Using Multi-scale Features

3:10 pm A. BENSEFIA, T. PAQUET, and L. HEUTTE

Grapheme Based Writer Verification

BREAK (3:30 - 3:50 pm) - Speakers and Chair Person meet at 3:40 pm

FORENSIC APPLICATIONS

19. Stroke Feature Extraction *Chair: Bryan Found*

3:50 pm Sargur N. SRIHARI and Graham LEEDHAM

A Survey of Computer Methods in Forensic Document Examination

4:10 pm Merijn VAN ERP, Louis G. VUURPIJL, Katrin FRANKE, and Lambert R.B. SCHOMAKER

The WANDA Measurement Tool for Forensic Document Examination

4:30 pm Katsuhiko UEDA, Ken-ichi MATSUO, and Yoshikazu NAKAMURA

A Computer-Based System to Support Forensic Analysis of Japanese Handwriting

4:50 pm Graham LEEDHAM, Vladimir PERVOUCHINE, WeiKei TAN, and Arun JACOB

Automatic Quantitative Letter Level Extraction of Features used by Document Examiners

CLOSING (5:30 - 5:50 pm)

Thursday, 6 November 2003

GRAND CANYON TOUR (7:00 am - 9:00 pm)