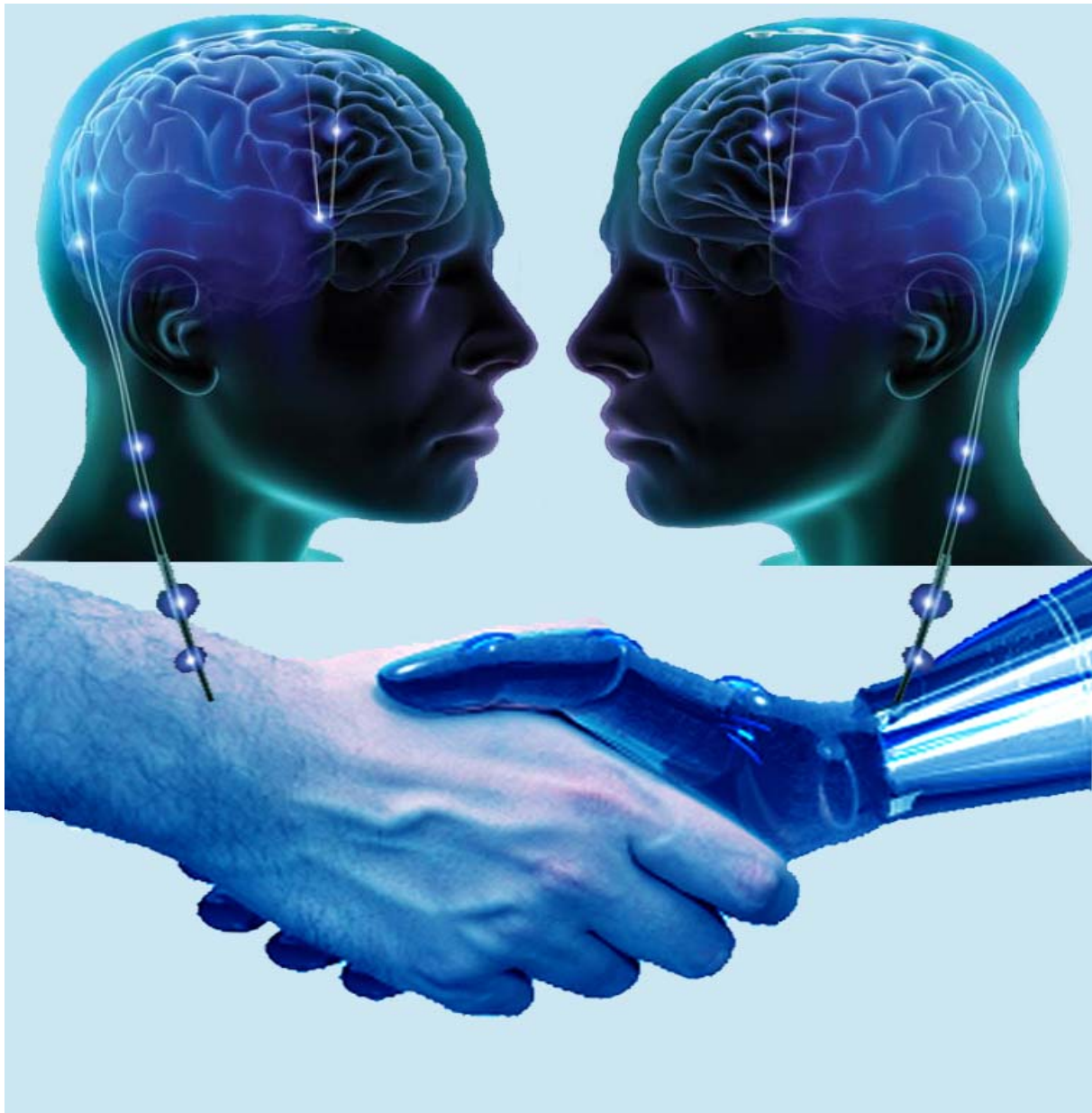


Neural Encoding of Perception and Action

Organizers: M. Giese and D. Sheinberg



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February 21 and 22, 2010
Sun 9:00 Mon 8:30
Lecture Hall
Max Planck Guesthouse
Spemannstrasse 36
72076 Tübingen

Sunday February 21th

Morning Session

Opening (9:00-10:05)

9:00-9:05	M. Giese / D. Sheinberg	Welcome
9:05-9:20	I. Autenrieth	(Dean of the Medical Faculty in Tübingen) Perspectives of the Medical Faculty
9:20-9:35	J. Davenport	(Associate Director, Institute for Brain Science Brown University) Brain Science at Brown
9:35-9:45	W. Warren	(Dept. of Cognitive and Linguistic Sciences, Brown University)
9:45-9:55	H. Bühlhoff	(Director, Dept. of Human Perception, Cognition and Action, MPI for Biological Cybernetics)
9:55-10:05	P. Thier	(Director, Hertie Institute for Clinical Brain Research and Coordinator, Werner Reichardt Centre for Integrative Neuroscience)

10:05-10:30

Coffee Break & Posters

BCI and Bio inspired Robotics (10:30-13:00)

10:30-10:55	A. Gharabaghi / A. Ramos	(Institute of Medical Psychology and Behavioural Neurobiology/Dept. of Neurosurgery) Neuroprostheses for Motor Rehabilitation in Chronic Stroke Patients
10:55-11:20	M. Grosse- Wentrup	(Dept. of Empirical Inference, MPI for Biological Cybernetics) Causal Bayesian Networks in Neuroimaging
11:20-11:45	C. Schwarz	(Hertie Institute, Centre for Integrative Neuroscience) Physiology of Perception and Intracortical Microstimulation in the Rat Whisker System

11:45-12:10 C. Crick (Dept. of Computer Science, Brown University)
Learning and Computing Motion Primitives from Demonstration

12:10-12:35 J. Peters (Dept. of Empirical Inference, MPI for Biological Cybernetics)
Skill Learning for Robotics

12:35-13:00 Brainstorming Discussion

13:00-14:00 Lunch Break (for contributors only)

Afternoon Session

Motor Systems (14:00-16:00)

14:00-14:25 P. Thier (Hertie Institute, Centre for Integrative Neuroscience)
The Cerebellar Basis of Saccadic Learning and its Role in the Compensation of Fatigue

14:25-14:50 M. Himmelbach (Hertie Institute for Clinical Brain Research)
Perception and Action in Patient Studies of Occipito-parietal Cortex

14:50-15:15 J. Sanes (Dept. of Neuroscience, Brown University)
Brain Representations for Voluntary Action and and Motor Learning

15:15-15:40 C. Curio (MPI for Biological Cybernetics, Dept. of Human Perception, Cognition and Action)
Realtime Facial Animation for Studying Interactive Perception and Rehabilitation

15:40-16:00 Brainstorming Discussion

16:00-16:30 Coffee Break and Posters

16:30- 17:30

Discussion about Possible Joint Projects and Grant Initiatives

17:30-19:00

Lab Visits at the University and the MPI

19:30-22:00

Dinner (for contributors only)

Monday February 22nd

Morning Session

Visual Perception (8:30-10:35)

8:30-8:55 M. Giese (Hertie Institute, Centre for Integrative Neuroscience)
Dynamic Representations for Complex Body Movements

8:55-9:20 D. Sheinberg (Dept. of Neuroscience, Brown University)
Neural Mechanisms of Action Recognition

9:20-9:45 T. Serre (Dept. of Cognitive and Linguistic Sciences, Brown University)
Computational Models of the Visual Cortex

9:45-10:10 A. Bartels (MPI for Biological Cybernetics, Dept. Physiology of Cognitive Processes and CIN)
Cortical Regions Distinguishing Self-motion Cues from Object Motion Cues

10:10-10:35 A. Nieder (Dept. of Biology, University, Tübingen)
Prefrontal Cortex Neurons Encode Quantitative Rules

10:35-11:00

Coffee Break & Posters

Action (11.00-13:15)

- 11:00-11:25 W. Warren (Dept. of Cognitive and Linguistic Sciences, Brown University)
Visual Control of Locomotion and Navigation
- 11:25-11:50 T. Meilinger / B. Mohler (MPI for Biological Cybernetics, Dept. of Human Perception, Cognition and Action, **Spatial Cognition and Virtual Characters**)
- 11:50-12:15 H.P. Mallot / G. Hardieß (Dept. of Biology, University Tübingen) **Working Memory Processes in Spatial Cognition**
- 12:15-12:40 M. Ernst (MPI for Biological Cybernetics) **Multisensory Perception for Action**
- 12:40-13:00 Brainstorming Discussion

13:00-14:30 Lunch Break and Posters (lunch for contributors only)

Afternoon Session

- 14:30-14:50 H. Herbert (Graduate Training Center of Neuroscience, Tübingen) **Study & Research Opportunities at the Graduate Training Center of Neuroscience**

14:50-16:00 Discussion about Possible Joint Projects and Grant Initiatives

16:00-18:30 Further lab Visits at the University and the MPI

19:00 - open end Evening event /Dinner (for contributors only)

Posters

1. **Influence of (A)Synchronous Egomotion on Action Perception**

Andrea Christensen, Winfried Ilg, Hans-Otto Karnath, Martin A. Giese

Hertie Institute for Clinical Brain Research, Centre for Integrative Neuroscience, University Clinic Tübingen

2. **Similarity Grouping and Repetition Blindness are Both Influenced by Attention.**

Bianca de Haan, Chris Rorden

Hertie Institute for Clinical Brain Research, Centre of Neurology, Section of Neurophysiology, University Clinic Tübingen

3. **Neural Correlates of Sound Localization in a Multisound Environment**

Zündorf¹, J. Lewald², S. Obermeyer, H.-O. Karnath¹

¹ Hertie Institute for Clinical Brain Research, Cognitive Neurology / Section of Neuropsychology, Tübingen, Germany

² Leibniz Research Centre for Working Environment and Human Factors (IfADo), Dortmund, Germany

4. **Functional Differences between the Human Superior Colliculus and Cortical Eye Fields in Visual Search**

Marc Himmelbach, Svenja Borchers

Hertie Institute for Clinical Brain Research, Centre of Neurology, University Clinic Tübingen

5. **Visual Localization in the Occipito-parietal Pathway**

Marc Himmelbach, Sebastian Werner, Hans-Otto Karnath

Hertie Institute for Clinical Brain Research, Centre of Neurology, University Clinic Tübingen

6. **Spatial Neglect: Not just a Right Hemisphere Phenomenon**

Julia Suchan, Hans-Otto Karnath

Hertie Institute for Clinical Brain Research, Centre of Neurology, University Clinic Tübingen

7. **Fiber Pathways Connecting cortical Areas Relevant for Spatial Orienting and Exploration**

Julia Suchan, Marc Himmelbach, Dorothee Saur, Hans-Otto Karnath

Hertie Institute for Clinical Brain Research, Centre of Neurology, University Clinic Tübingen

8. **The Virtual Face Mirror Project: Revealing Dynamic Self-Perception in Humans**

Cristóbal Curio

Max-Planck Institute for Biological Cybernetics, Human Perception, Cognition and Action, Tübingen

9. **Towards Robust Scene Analysis: A Versatile Mid-level Feature Framework**

David Engel

Max-Planck Institute for Biological Cybernetics, Human Perception, Cognition and Action, Tübingen

10. **Neurophysiological Correlates of Visual Awareness in the Human and Macaque Prefrontal Cortex**

Fanis Panagiotaropoulos

Max-Planck Institute for Biological Cybernetics, Physiology of Cognitive Processes, MPI Tübingen

11. **3D Vision for Autonomous Navigation of Unmanned Aerial Vehicles**

Chunrong Yuan, A. Mallot
Faculty of Biology, Cognitive Neuroscience, University Tübingen

12. **Skyline cues for visual homing in desert ant natural environments: a simulation approach**

Kai Basten, Hanspeter A. Mallot
Faculty of Biology, Cognitive Neuroscience, University Tübingen

13. **Spatial Representation of Dynamic Objects within Working Memory in a Collision Avoidance Task**

Gregor Hardieß
Faculty of Biology, Cognitive Neuroscience, University Tübingen

14. View-independent Recognition of Grasping Actions with a Cortex-inspired Model

Falk Fleischer, Antonino Casile, and Martin A. Giese

Hertie Institute for Clinical Brain Research, Cognitive Neurology, University Clinic
Tübingen

15. Interpreting the Neural Code with Formal Concept Analysis

Dominik Endres¹, Uta Priss², Peter Foldiak³

¹ Hertie Institute for Clinical Brain Research, Cognitive Neurology, University Clinic
Tübingen

² Edinburgh Napier University, UK

³ University of St. Andrews, Scotland, UK

Location:

Max Planck Guest House, Spemannstr. 36, 72076 Tübingen

