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## CV

*Dan Witzner Hansen investigates to which extend information from images of eyes can be obtained through computationally tractable techniques and how this information can be used in future applications.*

His focus is on robust methods for extracting information from the eyes. He investigate how this information can be employed as a part of the next generation of contactless and continuous biometric identification modalities and how it can be used for the general public everyday and out-of-laboratory use. His research covers aspects from computer vision, machine learning, HCI, neuroscience and psychology. Among other things the has contributed to the research in eye-based biometric markers and development of novel and low-cost gaze trackers. These eye trackers have together with novel gaze-based interaction techniques been used for interaction for physically disabled persons with great success.

## Publikationer

### High-Accuracy Gaze Estimation for Interpolation-Based Eye-Tracking Methods

Batista Narcizo, F., dos Santos, F. E. D. & Hansen, D. W., 15 sep. 2021, I: *Vision*. 5, 3, s. 1-27 s.

### Orangulas: effect of scheduled visual enrichment on behavioral and endocrine aspects of a captive orangutan (*Pongo pygmaeus*)

Olvido Perea Garcia, J., Miani, A., Miani, A., Malmkvist, J., Hammer, T., Pertoldi, C., Pertoldi, C., Pertoldi, C., Kruse Nielsen, R., Hansen, D. W. & Bach, L. A., 31 jan. 2020, I: *Journal of Zoo and aquarium research*. 8, 1

### Label Likelihood Maximisation: Adapting iris segmentation models using domain adaptation

Eskildsen, A. M. & Hansen, D. W., 2020, *ETRA '20 Full Papers: ACM Symposium on Eye Tracking Research and Applications*. Association for Computing Machinery, s. 1-9 s. 5

### Aiming for the quiet eye in biathlon

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### Eye movement recordings in natural settings

Tatler, B., Hansen, D. W. & Pelz, J., 2019, *Eye Movement Research. Studies in Neuroscience, Psychology and Behavioral Economics: An introduction to the scientific foundations of eye movement research and its applications* Editors: Christoph Klein & Ulrich Ettinger. Martin Reuter & Christian Montag: Springer

### Using Priors to Compensate Geometrical Problems in Head-Mounted Eye Trackers

Batista Narcizo, F., Ahmed, Z. & Hansen, D. W., 23 aug. 2017.

### Computer-implemented gaze interaction method and apparatus

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### **A GAZE TRACKER AND A GAZE TRACKING METHOD**

Mardanbegi, D. & Hansen, D. W., 11 aug. 2016, IPC nr. A61B3/113; G06F3/01, Prioritetsdato 4 feb. 2015, Prioritetsnr. DKPA201570064 20150204

### **Pupil Center as a Function of Pupil Diameter**

Ahmed, Z., Mardanbegi, D. & Hansen, D. W., 14 mar. 2016, *ETRA '16 Proceedings of the Ninth Biennial ACM Symposium on Eye Tracking Research & Applications*. Association for Computing Machinery, s. 283-286 4 s.

### **Depth Compensation Model for Gaze Estimation in Sport Analysis**

Batista Narcizo, F. & Hansen, D. W., 17 dec. 2015, *2015 IEEE International Conference on Computer Vision Workshop (ICCVW)*. IEEE Professional Communication Society, s. 788-795 8 s.

### **Why have microsaccades become larger? Investigating eye deformations and detection algorithms.**

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### **Head and eye movement as pointing modalities for eyewear computers**

Jalaliniya, S., Mardanbeigi, D., Pederson, T. & Hansen, D. W., 19 jun. 2014, *Proceedings of the 2014 11th International Conference on Wearable and Implantable Body Sensor Networks Workshops*. IEEE Computer Society Press, 4 s.

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### **Robust glint detection through homography normalization**

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### **Method of Determining Reflections of Light**

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### **Proceedings of the Symposium on Eye Tracking Research and Applications 2014: Conference ETRA '14 Eye Tracking Research and Applications**

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### **Synergies between head-mounted displays and head-mounted eye tracking: The trajectory of development and its social consequences**

Ling, R., Mardanbegi, D. & Witzner Hansen, D., 2014, *Living inside social mobile information*. 2251 Arbor Blvd. Dayton, OH 45439, USA: Greyden Press, LCC, s. 131-158

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### **Parallax error in the monocular head-mounted eye trackers**

Mardanbeigi, D. & Witzner Hansen, D., 2012, *UbiComp '12 Proceedings of the 2012 ACM Conference on Ubiquitous Computing*. s. 689-694 6 s.

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### **In the Eye of the Beholder- A Survey of Models for Eyes and Gaze**

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### **Gaze-controlled driving**

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#### **Eye Tracking**

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#### **Location-based Services using Image Search**

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#### **Location-based solutions in the Experience centre**

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#### **Robustifying eye interaction**

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#### **Eye tracking in the wild**

Pece, A. E. C. & Hansen, D. W., 2005, *Eye tracking in the wild*. s. 155-181 27 s.

### **Improved Likelihood Function in Particle-based IR Eye Tracking**

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### **Command Without a Click : Dwell Time Typing by Mouse and Gaze Selections**

Rauterberg, M. (red.), Menozzi, M. (red.), Wesson, J. (red.), Hansen, J. P., Johansen, A. S., Hansen, D. W., Itoh, K. & Mashino, S., 2003, *Command Without a Click : Dwell Time Typing by Mouse and Gaze Selections*. Rauterberg, M., Menozzi, M. & Wesson, J. (red.). IOS Press, s. 121-128 8 s.

## **Presseklip**

### **Bedre eyetracking-algoritmer fra ITU kan give flere guldmedaljer**

Dan Witzner Hansen & Fabricio Batista Narcizo

22/08/2016

1 element af Mediedækning

### **Bornholmsk professor vil sikre øjets informationer**

Dan Witzner Hansen

15/11/2021

1 Mediebidrag

### **Debat: Danmark har fordele i kampen om at blive international AI-frontløber**

Dan Witzner Hansen

26/04/2021

1 Mediebidrag

### **Forskning baner vejen for sportsmedaljer**

Dan Witzner Hansen

14/12/2022

1 Mediebidrag

### **Forskning i øjets bevægelse hjælper elitesporten frem i feltet**

Dan Witzner Hansen

13/09/2016

1 element af Mediedækning

### **Hvem kigger med**

Dan Witzner Hansen & Jari Kickbusch

09/05/2014

1 element af Mediedækning

### **Hvem kigger med?**

Dan Witzner Hansen

09/05/2014

1 element af Mediedækning

### **Ingen fælles standard for datasikkerhed i Danmark**

Dan Witzner Hansen

30/04/2014

1 element af Mediedækning

### **Kan virtual reality komme til at ligne virkeligheden så meget, at vi ikke kan se forskel?**

Dan Witzner Hansen

24/07/2021

1 Mediebidrag

**Læk sætter fokus på datasikkerhed**

Dan Witzner Hansen

30/04/2014

1 element af Mediedækning

**Ny ITU-professor forsker i øjets informationer**

Dan Witzner Hansen

16/12/2021

1 Mediebidrag

**SJÆLENS SPEJL: Afslørende blikke**

Dan Witzner Hansen

18/02/2022

1 Mediebidrag

**Projekter**