Tom van Grootel

Dr. Tom J. van Grootel Ph.D.
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github.com/r5atom/
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Experience

2018 - present

Data scientist, Gemeente Stichtse Vecht, Maarssen.

- Advisor and key contributor to innovate the organization (public sector) in becoming data driven.
- Lead a project with an external academic partner (Utrecht Data School, University Utrecht) to employ machine learning to data stored in the Social Domain.

2013 - 2018

Postdoctoral fellow, Center for Neural Science, Visual Neuroscience Laboratory, New York University, New York, USA. Advisors: Dr. L. Kiorpes, Dr. A.J. Movshon

- Uncovering the link between the amblyopic impairment of detecting visual motion and the neural activity in the cortex.
- Performed EEG source localization guided by anatomical MRI images. Several tissue types deflect the source signal in different ways. By knowing the anatomical compartments, source localization technique attempts to solve this "inverse problem".
- Examined the development of handedness. The use of a preferred hand was tracked longitudinally throughout development.

2011 - 2013

Postdoctoral fellow, Max Planck Institute for Biological Cybernetics. Tuebingen, Germany. Advisors: Dr. L. Kiorpes, Dr. N.K. Logothetis

- Longitudinally tracked visual development. Brain activity was recorded in a high resolution 7T fMRI scanner.
- Recorded neuronal activity in a visual memory task.

2006 - 2011

Ph.D. Program, Donders Centre for Neuroscience, Radboud University, Nijmegen. Advisor: Dr. A.J. van Opstal

- Examined the effects of eye-head movements and positions on spatial localization of visual and auditory targets.
- Collaborated on developing a new technique to measure head-unrestrained eye position.

2002 - 2004

Master Program, Vision and Cognition Group of the *Netherlands Ophthalmic Research Institute* (IOI), Amsterdam. Advisors: Dr. S.I. Moro, Dr. P.R. Roelfsema

- Examined the effect of visual grouping on neuronal activity in inferior temporal cortex.
- Acquired reaction times subjects performing a visual grouping task.

Master Program, Auditory Research Lab, Department of Medical Physics and Biophysics, University of Nijmegen. Advisors: Dr. J. Vliegen, Dr. A.J. van Opstal

- Examined localization performance of auditory and visual targets. Eye and head orientation were recorded as a measure of localization accuracy.

Education

2011

Radboud University, Donders Centre for Neuroscience, Nijmegen.

Ph.D. in Neuroscience

Award: Prompt Ph.D. scheme, Donders institute.

Thesis: On the Role of Eye and Head Position on Spatial Localisation Behaviour. pdf

2006

Radboud University, Faculty of Science, Dept. of Biology, Nijmegen.

B.S. and M.S. in Biology

Skills

Expert:
Python, Jupyter, Matlab, MS Office, Adobe Illustrator, Adobe InDesign, BrainVoyager

Competent:
R, SQL, HTML, CSS, Shell scripting, FSL, FreeSurfer, Adobe Photoshop

Some experience:
Git, C++, js, java, ruby

Data flavors:
Structured, Unstructured, EEG, fMRI, anatomical MRI, single unit recordings, MVPA, regression analyses, linear modeling.

Certificates

- Scrum (*Zilverline*)
- Big Data & Data Science Bootcamp (*Anchormen*)
- Data Awareness Dag (including data ethics tool: DEDA) (*VNG*)
- Data Warehouse Fundamentals + Oracle Database 12c: SQL fundamenten (*vijfhart*)

30+ online courses with certification through *DataCamp* and *Codecademy* on topics such as

- Programming (Python, R)
- Machine Learning (Decision tree, clustering)
- Data science (Statistics, data processing)

Languages

English: Fluent German: Good Dutch: Native

Personal interests

Music concerts, Modern art, Computing, Running

Teaching, Supervising and Mentoring

2018 - present

Gemeente Stichtse Vecht
Supervise students enrolled in a data analyses program by the University Utrecht.

2011 - 2018

New York University
Assist and supervise undergraduate and Ph.D. projects.

2012

Technical University of Darmstadt, Germany
Taught an EEG course to biology students

2006 - 2011

Radboud University, Department of Biophysics, Nijmegen
Supervised master student projects.

2005 - 2009

Radboud University, Faculty of Science and Medical Faculty, Nijmegen

- Taught a biophysics course to master students of biology and molecular life sciences. By using Matlab Simulink the linear system theory was explained.
- Taught a perception course to third year medical students. The auditory and the visual system were covered.
- Taught a practical course of the vestibular system for third year medical students.
- Taught a biophysics course to bachelor students of biology. Basic and applied mathematics were covered.

2002 - 2005

Radboud University Nijmegen, Subfaculty of Biology Teaching Assistant

Volunteering

- Contributions to Open source course on Git and Github
- Moderator of Matlab Knowledge Database for the Donders Institute
- Organizer, Stichting Science Café Nijmegen
- Reviewer of manuscripts, Journal of Neurophysiology, PLoS ONE

Memberships

- Society for Neuroscience
- Vision Sciences Society
- Association for Psychological Science
- Federation of European Neurosciences
- New York Academy of Sciences
- Dutch Neurofederation
- Vereniging voor Biofysica en Biomedische Technology (Dutch Society for Biophysics and Biomedical Technology)

Publications

Journal articles

Van Grootel TJ, Meeson A, Munk MMH, Kourtzi Z, Movshon JA, Logothetis NK, Kiorpes L (2017) *Development of visual cortical function in infant macaques: a BOLD fMRI study.* PLoS ONE 12(11):e0187942. doi

Van Grootel TJ, Van der Willigen RF, Van Opstal AJ (2012) *Experimental test of spatial updating models for monkey eye-head gaze shifts.* PLoS ONE 7:e47606. doi

Van Grootel TJ, Van Wanrooij MM, Van Opstal AJ (2011) *Influence of static eye and head position on tone-evoked gaze shifts.* J Neurosci 31:17496–17504. doi

Van Barneveld DCPBM, Van Grootel TJ, Alberts B, Van Opstal AJ (2011) *The effect of head roll on perceived auditory zenith.* Exp Brain Res 213:235–243. doi

Van Grootel TJ, Van Opstal AJ (2010) *Human sound-localization behavior accounts for ocular drift.* J Neurophysiol 103:1927–1936. doi

Bremen P, Van der Willigen RF, Van Wanrooij MM, Schaling DF, Martens MB, Van Grootel TJ, Van Opstal AJ (2010) *Applying double-magnetic induction to measure head-unrestrained gaze shifts: calibration and validation in monkey.* Biol Cybern 103:415–432. doi

Van Grootel TJ, Van Opstal AJ (2009) *Human sound-localization behaviour after multiple changes in eye position.* Eur J Neurosci 29:2233–2246. doi

Vliegen J, Van Grootel TJ, Van Opstal AJ (2005) *Gaze orienting in dynamic visual double steps.* J Neurophysiol 94:4300–4313. doi

Vliegen J, Van Grootel TJ, Van Opstal AJ (2004) *Dynamic sound localization during rapid eye-head gaze shifts.* J Neurosci 24:9291–9302. doi

Meeting proceedings

SfN 2015

Van Grootel TJ, Movshon JA, Kiorpes, L (2015) Binocular imbalance in macaque MT in strabismic amblyopia. Program No. 701.08. 2015 Neuroscience Meeting Planner. Chicago, IL, USA. doi

VSS 2015

Van Grootel TJ, Kiorpes L (2015) Neuronal response properties in area MT of an awake amblyopic macaque monkey. 2015 Vision Sciences Society Meeting, St. Pete, FL, USA. Journal of Vision 15(12):651. doi

SfN 2012

Van Grootel TJ, Meeson A, Munk MMH, Kourtzi Z, Movshon JA, Logothetis NK, Kiorpes L (2012) Longitudinal fMRI study of cortical development in young monkeys. Program No. 464.14. 2012 Neuroscience Meeting Planner. New Orleans, LA, USA. doi

Invited lecture: Tuebingen, MPI f. Biol. Cyb. (friko)

Van Grootel TJ (2011) The role of eye and head orientation in spatial localization.

Invited lecture: Cardiff Univ., School of Biosci.

Van Grootel TJ (2010) How does the brain solve the spatial constancy problem? On the Role of Eye Position and Target Updating.

PN10

Van Grootel TJ, Van Opstal AJ (2010) Measure Head-free Gaze Shifts in Macaque Monkeys by Using a Double Magnetic Induction Technique. Tuebingen Univ.

FENS 2010

Van Grootel TJ, Van Wanrooij MM, Smeenk M, Van Opstal AJ (2010) Frequency-dependent compensation of initial eye and head orientation in human sound-localisation. FENS Abstr., vol.5, 169.24, 2010. Amsterdam. doi

FENS 2010

Martens MB, Van der Willigen RF, Bremen P, Van Grootel TJ, Van Opstal AJ (2010) Head-unrestrained gaze shifts of macaque monkeys to audiovisual targets. FENS Abstr., vol.5, 169.13, 2010. Amsterdam. doi

Donders Discussions 2010

Invited lecture: Nijmegen, Donders Inst., Donders Discussions, 2010

Van Grootel TJ (2010) On the role of eye position and target updating.

DvdP 2009

Van Grootel TJ, Van Opstal AJ (2009) Human Sound Localization Behavior After Prolonged Eccentric Fixation. the Dag van de Perceptie, Soesterberg, TNO

SfN 2008

Van Grootel TJ, Van Opstal AJ (2008) Compensation of eye position in human sound localization for dynamic and static fixation. Program No. 667.10. 2008 Neuroscience Meeting Planner. Washington, DC, USA. doi

DvdP 2008

Van Grootel TJ, Van Opstal AJ (2008) Human sound-localization after multiple changes in eye position. the Dag van de Perceptie, Soesterberg, TNO

Invited lecture: Amsterdam, VU, Auditory system study group (WAS).

Van Grootel TJ (2008) Human Sound-Localization Behavior After Multiple Changes in Eye Position.

SfN 2003

Vliegen J, Van Grootel TJ, Versnel H, Van Opstal AJ (2003) Dynamic human sound localization during head-free gaze shifts. Program No. 488.4. 2003 Neuroscience Meeting Planner. New Orleans, LA, USA.