Sébastien M. Crouzet

CIVIL STATUS	Age: 34 Citizenship: French Married, two daughters.

CONTACT INFORMATION	CNRS CERCO UMR 5549 e-mail: seb.crouzet@gmail.com Pavillon Baudot CHU Purpan 31052 Toulouse Cedex web: http://scrouzet.github.com

CURRENT POSITION

Post-doctoral Researcher, Centre de Recherche Cerveau & Cognition, Toulouse, France
Principal Investigator: Rufin VanRullen
Topic: Perceptual cycles and attention

EDUCATION & ACADEMIC EXPERIENCE

Post-doctoral Researcher, Charité University, Berlin, Germany   **2012-2014**
Principal Investigator: Niko Busch
Topic: Reentrant processing and visual awareness: neural and perceptual mechanisms

Post-doctoral Researcher, Brown University, Providence, RI, USA   **2010-2012**
Principal Investigator: Thomas Serre
Topic: Linking behavioral and electrophysiological data to computational models

Ph.D. in Neurosciences, Université de Toulouse, CNRS, France   **2010**
Advisor: Dr Simon J. Thorpe
Committee: F. Vitu-Thibault, G.A. Rousselet, O. Pascalis, B. Rossion, P-G Zanone, D. Bazalgette
Topic: Ultra-rapid recognition of objects in natural scenes.
Highest academic distinction: Très honorable avec les félicitations du jury à l'unanimité.

European Summer School in Visual Neurosciences   **Sep 2008**
'From Spike to Awareness', Organisation: K. Gegenfurtner, F. Bremmer, J. Braun.
Rauischholzhausen, Germany

Master in Cognitive Science, *Graduated magna cum laude*   **2006**
ENS / EHESS / Ecole Polytechnique / Paris 5 / Paris 6, France

Licence in Cognitive Science, *Graduated magna cum laude*   **2004**
Université Bordeaux 2, France

DEUG in Psychology   **2003**
Université Paris 5, France

Baccalauréat Scientifique, spécialité Mathématiques   **2000**
Lycée Bernard Palissy, Saintes, France

REFEREED JOURNAL ARTICLES

Crouzet, S.M., Kovalenko, L.Y., Hviid del Pin, S., Overgaard, M., & Busch N. A. (accepted). Early visual processing allows for selective behavior, shifts of attention, and conscious visual experience in spite of masking. *Consciousness and Cognition*.

Iemi, L., Chaumon, M., **Crouzet, S. M.** & Busch N.A. (2017) Spontaneous neural oscillations bias perception by modulating baseline excitability. *Journal of Neuroscience*, 37(4): 807-819..

Cauchoix, M., **Crouzet, S. M.**, Fize, D., & Serre, T. (2016). Fast ventral stream neural activity enables rapid visual categorization. *NeuroImage*, 125, 280290. doi:10.1016/j.neuroimage.2015.10.012

Sofer, I., **Crouzet, S. M.**, & Serre, T. (2015) Explaining the Timing of Natural Scene Understanding with a Computational Model of Perceptual Categorization. *PLoS Computational Biology*, 11(9): e1004456.

Chaumon, M., **Crouzet, S. M.**, & Busch N.A. (2015). Cutting-edge methods for EEG research on cognition. *Journal of Neuroscience Methods*, 250, 1-2.

Crouzet*, S. M., Busch*, N.A. & Ohla, K. (2015). Taste quality decoding parallels taste sensations.*Current Biology*, 25, 1-7.

Wu*, C.T., **Crouzet*, S. M.**, Thorpe, S.J. & Fabre-Thorpe, M. (2015). At 120 ms you can spot the animal but you don't yet know it's a dog. *Journal of Cognitive Neuroscience*, 27(1) : 141-149.

Crouzet SM, Overgaard M & Busch NA (2014). Visual masking leaves fastest saccadic responses intact. *PLoS ONE*, 9(2), e87418.

Cauchoix M and **Crouzet SM** (2013). How plausible is a subcortical account of rapid visual recognition?. Front. Hum. Neurosci. 7:39.

Crouzet SM, Joubert OR, Thorpe SJ, Fabre-Thorpe M (2012) Animal Detection Precedes Access to Scene Category. PLoS ONE 7(12): e51471.

Crouzet SM and Thorpe SJ (2011). Low level cues and ultra-fast face detection. Front. Psychology 2:342.

Crouzet SM and Serre T (2011). What are the visual features underlying rapid object recognition? Front. Psychology 2:326.

Crouzet, S. M., Cauchoix, M. (2011). When does the visual system need to look back? *The Journal of Neuroscience*, 15 June 2011, 31(24): 8706-8707.

Crouzet, S. M., Kirchner, H., & Thorpe, S. J. (2010). Fast saccades toward faces: Face detection in just 100 ms. *Journal of Vision*, 10(4):16, 1-17.

BOOK CHAPTER | M., Fabre-Thorpe, **S. Crouzet**, G. A. Rousselet, H. Kirchner and S. J. Thorpe (2008). Catégorisation visuelle rapide: les visages sont-ils des objets spécifiques? In *Traitement et reconnaissance des visages: du percept à la personne*. E. J. Barbeau, S. Joubert and O. Felician. Marseille, Solal: 239-260.

CONFERENCE PRESENTATIONS | Evelina Thunell, Sébastien M. Crouzet, Luc Valton, Jean-Christophe Sol, Emmanuel J. Barbeau & Simon J. Thorpe (2016) Large-scale human intracranial LFPs related to scene cuts in the TV series Friends. European Conference on Visual Perception, Barcelona, Spain.

Sébastien M. Crouzet & Rufin VanRullen (2016) The half-time groove of divided attention: differences in EEG and decoding power spectra when attending to one vs. two items. Vision Science Society, St Pete Beach, Florida, USA.

Kathrin Ohla, Niko A. Busch & Sébastien M. Crouzet (2016) Dynamic coding of taste categories in the human brain. ISOT 2016 (17th International Symposium on Olfaction and Taste).

Luca Iemi, Lena Walther, Sébastien Crouzet, Maximilien Chaumon & Niko A. Busch (2015) Uncovering the role of spontaneous alpha oscillations in visual conscious processing. ASSC19 in Paris (Association for the Scientific Study of Consciousness).

Kathrin Ohla, Niko A. Busch & Sébastien M. Crouzet (2014) Decoding neural taste quality processing with multivariate pattern analyses (MVPA) of human brain electric activity. AChemS (Association for Chemoreception Sciences) 36th Annual Meeting.

Sébastien M. Crouzet, Simon Hviid Del Pin, Morten Overgaard & Niko A. Busch (2014) Revealing the dynamics of visual masking using a speeded saccadic choice task. VSS2014.

Imri Sofer, Sébastien M. Crouzet & Thomas Serre (2014) A simple rapid categorization model accounts for variations in behavioral responses across rapid scene categorization tasks. VSS2014.

Sébastien M. Crouzet, Niko A. Busch, & Kathrin Ohla (2014) Multivariate classification of ERP topographical information allows to investigate taste quality perception time-course. Cutting EEG 2014.

Imri Sofer, Kwang Ryeol Lee, Pachaya Sailamul, Sébastien Crouzet & Thomas Serre (2013) Understanding the nature of the visual representations underlying rapid categorization tasks. [Abstract]. Journal of Vision, 13(9), article 658.

Crouzet SM, Hviid Del Pin S, Overgaard M & Busch NA (2013) Dynamics of saccadic responses reveal how object substitution masking interferes with reentrant processing. 55th TeaP - Tagung experimentell arbeitender Psychologen (Conference of Experimental Psychologists).

Crouzet SM, Cauchoix M, Fize D & Serre T (2011) The neural basis of rapid categorization: Linking computational models and electrophysiology. NIPS 2011 workshop on machine learning and interpretation in neuroimaging.

Cauchoix M., Crouzet S., Fize D. & Serre T. (2011) Visual features and dynamics of rapid recognition in monkey visual cortex. SFN 2011

Crouzet S M, Stemmler T, Capps M, Fahle M & Serre T (2011) Single-trial decoding of binocular rivalry switches from oculometric and pupil data. Vision Science Society, Naples, Florida.

Brilhault A, Mathey M, Jolmes N, Crouzet S M & Thorpe SJ (2011) Saccades to color: an ultra-fast controllable mechanism to low-level features. Vision Science Society, Naples, Florida.

Thorpe S J, Brilhault A, Mathey M, Crouzet S M, 2010, "Colour based target selection for ultrarapid saccades: The fastest controllable selection mechanism?" Perception 39 ECVP Abstract Supplement, page 158

Mathey M A, Crouzet S M, Thorpe S J, 2010, "The accuracy of ultra-rapid saccades to faces" Perception 39 ECVP Abstract Supplement, page 171

Crouzet, S. M. & Thorpe, S. J. (2010) Power spectrum cues underlying ultra-fast saccades towards faces [Abstract]. Journal of Vision, 10(7): 634

Mathey, M. A., Crouzet, S. M. & Thorpe, S. J. (2010) Ultra-rapid saccades to faces : the effect of target size [Abstract]. Journal of Vision, 10(7): 635

Crouzet S, Mathey M, Thorpe S J (2009). Ultra-fast saccades to faces: A temporal precedence effect? Perception 38 ECVP Abstract Supplement, page 157.

Crouzet, S. M., Joubert, O. R., Thorpe, S. J., & Fabre-Thorpe, M. (2009). The bear before the forest, but the city before the cars: Revealing early object/background processing [Abstract]. Journal of Vision, 9(8):954

Fabre-Thorpe, M., Crouzet, S. M., Wu, C.-T., & Thorpe, S. J. (2009). At 130 ms you "know" where the animal is but you don't yet "know" it's a dog [Abstract]. Journal of Vision, 9(8):786

Thorpe, S. J., Crouzet, S. M., Macé, M. J., Bacon-Macé, N., & Fabre-Thorpe, M. (2009). Masking in a high-level gender discrimination task is essentially entirely pre-cortical [Abstract]. Journal of Vision, 9(8):546

S Crouzet, H Kirchner, S J Thorpe (2008). Saccading towards faces in 100 ms. What's the secret? Perception 37 ECVP Abstract Supplement, page 119.

S J Thorpe, H Kirchner, S Crouzet, P Bayerl, H Neumann (2008). Processing times for optic flow patterns measured by the saccadic choice task. Perception 37 ECVP Abstract Supplement, page 40.

Crouzet, S., Thorpe, S. J., & Kirchner, H. (2007). Category-dependent variations in visual processing time. Journal of Vision, 7(9):922,922a, http://journalofvision.org/7/9/922/, doi:10.1167/7.9.922.

Thorpe, S., Crouzet, S., & Kirchner, H. (2007). Saliency maps and ultra-rapid choice saccade tasks. Journal of Vision, 7(9):30, 30a, http://journalofvision.org/7/9/30/, doi:10.1167/7.9.30.

Simon J. Thorpe, Sébastien Crouzet, Holle Kirchner and Michèle Fabre-Thorpe (2006). Ultra-rapid face detection in natural images : implications for computation in the visual system. First French Conference on Computational Neurosciences, pp. 124-127. Abbaye des Prémontrés, Pont à Mousson, France.

Simon J. Thorpe, Sébastien Crouzet and Holle Kirchner (2006). Comparing processing speed for complex natural scenes and simple visual forms. Perception, vol. 35, p 128.

INVITED
TALKS

Invited by Christophe Jouffrais, IRIT (Toulouse Computer Science Research Institute), France **Oct 2015**
Studying the dynamics of perception using machine learning.

Cutting EEG 2015, Berlin School of Mind & Brain, Germany **29 September - 2 October 2015**
Time-resolved MVPA for EEG analysis.
http://www.mind-and-brain.de/cutting-eeg-2015

Invited by David Sheinberg, Brown University, Providence, RI, USA **Mar 2012**
An early cortical basis for speed of sight.

Invited by Simon J. Thorpe, CERCO-CNRS, Toulouse, France **Jan 2012**
Rapid Visual Processing of Natural Scenes: Linking Behavioral and Electrophysiological Data to Computational Models.

In-House Seminar, Neuroscience Department, Brown University, Providence, RI, USA **Nov 2011**
Rapid Visual Processing of Natural Scenes: Linking Behavioral and Electrophysiological Data to Computational Models.

Invited by Aude Oliva, MIT, Cambridge, MA, USA **May 2009**
Revealing early visual processing of natural scenes using a saccade choice task.

EDITORIAL
SERVICE

Reviewing and editing for scientific journals
Animal Cognition; Attention, Perception, & Psychophysics; Brain Topography; Cerebral Cortex; Cognition and Emotion; European Journal of Neuroscience; Frontiers in Perception Science (review editor); Frontiers in Human Neuroscience (review editor); Frontiers in Computational Neuroscience; IEEE Transactions on Pattern Analysis and Machine Intelligence; Journal of Experimental Psychology: Human Perception and Performance; Journal of Neuroscience; Journal of Neuroscience Methods; Journal of Vision; Neuroimage; Perception; PLoS ONE; Psychological Science; Robotics and Autonomous Systems; Seeing and Perceiving; Vision Research.

Program committee for conferences
Member of the program committee of the The First International Workshop on Computational Models of the Visual Cortex (CMVC): Hierarchies, Layers, Sparsity, Saliency and Attention. Held as part of the Bio-inspired Information and Communications Technologies conference (BICT), New York, 3-5 December, 2015. http://cmvc.bionetics.org/2015/show/home

TEACHING CERTIFICATION

Qualification pour la fonction de Maître de conférences - section 69 - Neurosciences
08/02/2012 - 31/12/2016 (numéro de qualification : 12269224957)

TEACHING EXPERIENCE

Instructor (14 sessions of 90 min)   **2013/2014**
Master program, Berlin School of Mind & Brain, Berlin, Germany
Seminar on visual perception. Teaching in English language.

Statistics Tutorial (6h)   **Dec 2012**
Doctoral school, Berlin School of Mind & Brain, Berlin, Germany
Using the R environment for data analysis, statistical computing and graphics. Teaching in English language.

Guest lecture (2h)   **2011**
Computational Vision course, CLPS1520, Brown University, Providence, RI, USA
Object recognition in natural scenes. Teaching in English language.

Teaching Assistant (96h over 3 years)   **2006 to 2009**
Department of Psychology, Université Toulouse Le Mirail, Toulouse, France
Introduction to Neurosciences

Instructor (30h over 3 years)   **2006 to 2009**
School of Psychomotricity, Faculté de Médecine de Rangueil, Toulouse, France
Visual system and eye movements

Instructor (24h over 2 years)   **2006 to 2007**
School of Psychomotricity, Faculté de Médecine de Rangueil, Toulouse, France
Epistemology of neuropsychology

Instructor (10h)   **2006**
School of Psychomotricity, Faculté de Médecine de Rangueil, Toulouse, France
Sleep, emotions

ACADEMIC MENTORING

As a PhD student and post-doc, I have worked with:
Luca Iemi   *PhD student at the Berlin School of Mind and Brain, Germany*
Simon Ludwig   *Master student at Freie Universität, Berlin, Germany*
Maxime Cauchoix   *PhD student at Université Toulouse 3 Paul Sabatier, Toulouse, France*
Imri Sofer   *PhD student at Brown University, Providence, USA*
Robin Martins   *Undergraduate student at Brown University, Providence, USA*
Rohan Katipally   *Undergraduate student at Brown University, Providence, USA*
Marie Mathey   *Master student in Toulouse, France*

OFFICIAL COMMITMENTS

Organizer of Cutting EEG 2014   **1921 February 2014**
Member of the organizing committee for the Cutting EEG 2014: Symposium on cutting-edge EEG methods. Specifically in charge of the proceedings' publication in Journal of Neuroscience Methods.
http://www.mind-and-brain.de/postdoctoral-program/scientific-events/cutting-eeg/
Berlin, Germany

Organizer of the J3CN   **2010 to 2011**
Journal Club for Cognitive & Computational Neuroscience, Brown University
https://sites.google.com/a/brown.edu/j3cn/
Providence, USA

Header of the Organizing Committee for the CJCSC'09   **2008 to 2009**
French Cognitive Science Young Researcher Conference
<http://fresco.risc.cnrs.fr/cjcsc2009/>
Toulouse, France

Header of the Young Researcher Workshop for trend forecasting   **2009**
in Cognitive Science
Part of the PIRSTEC project funded by the French National Research Agency (ANR)
<http://pirstec.risc.cnrs.fr>

Students and Post-Docs representative   **2006 to 2009**
Brain and Cognition Research Center lab council
Toulouse, France

Founding member of the association inCOGnu   **2006 to 2009**
Association of cognitive science students of Toulouse
<http://incognu.fr/>
Toulouse, France

FELLOWSHIPS,
GRANTS &
FUNDINGS

ERC grant awarded to Rufin VanRullen   **From Sep 2014**
European Research Counsil Consolidator Grant: P-cycles

Grant awarded to Niko Busch   **Sep 2012 to Aug 2014**
Deutsche Forschungsgemeinschaft (DFG)

Grant awarded to Thomas Serre   **Sep 2010 to Jul 2012**
Defense Advanced Research Projects Agency (DARPA).
I had an active participation in the monthly+trimestrial+annual reports.

4th year of Ph.D. fellowship   **Nov 2009 to May 2010**
Fondation pour la Recherche Médicale (FRM)

Postgraduate scholarship   **Oct 2006 to Sep 2009**
Délégation Générale pour l'Armement (DGA, French Ministry of Defense)

Master scholarship (bourse dexcellence)   **Sep 2005 to Jun 2006**
Université René Descartes Paris 5

PROFESSIONAL
SOCIETIES

Society for Neuroscience
Vision Science Society

PROFESSIONAL
SKILLS

Operating Systems: Advanced knowledge of Mac OS and GNU Linux.
Programming languages: MATLAB, R, Python.
Experimental testing: Psychtoolbox for MATLAB.
Eye movement recording: SR Research Eyelink, SMI View Eyetracker, Chronos Eyetracker, EOG.
EEG and iEEG analysis: Homemade MATLAB functions and EEGlab.
Statistical Analysis: Parametric and non-parametric tests, Multivariate Pattern Analysis.
Communication and publishing: Advanced knowledge of LaTeX, Adobe Illustrator & the presentation
software Keynote (Mac OS); website creation and maintenance with HTML and CSS.

Referees

Dr Simon J. Thorpe
Ph.D. advisor
CNRS, Toulouse, France
phone: *available on request*
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Dr Thomas Serre
Post-doc advisor
Brown University, Providence, RI, USA
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Dr Niko A. Busch
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Universität Münster, Germany
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Dr Rufin VanRullen
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CNRS, Toulouse, France
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rufin.vanrullen@cnrs.fr