

Personal details

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Nationalities: Israeli , French
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Languages:

English, Hebrew, French.
 Basic knowledge of Chinese, Czech

Current positions

Post-doctoral research fellow in the Stern school of Business & Center for Neural Science at New York University ('NYU'), and the Department of Neurosurgery at the University of California – Los Angeles ('UCLA').

Research interests *Attention, Consciousness, Emotions, Dreams*
Methods *Single-neuron recordings in humans, eye-tracking, fMRI*

Sloan Faculty at the American Film Institute ('AFI').

Teaching *Screenwriting*

Education

2010 -	Post-doctoral Research Fellow	(Interdisciplinary collaboration)	
<i>Advisors: Eric Greenleaf, Vicki Morwitz, Geeta Menon ('NYU Stern Business School'); David Heeger ('NYU Psychology'); Itzhak Fried ('UCLA')</i>		Stern school of Business	NYU
		Center for Neural Science	NYU
		Department of Neurosurgery	UCLA
Projects:			
- Single neuron correlates of emotions regulation and high-level emotions.			
- Eye-tracking, fMRI and psychophysical measures of 'engagement'.			
2011 -	Faculty	American Film Institute ('AFI')	
- Overseeing the writing of science fiction and science-based films.			
- Teaching script writing to the AFI fellows through the Sloan foundation / Museum of the Moving Image grant.			
2009 - 2010	Post-doctoral Research Fellow	Computational Neuroscience	Caltech
<i>Advisors: Christof Koch, Ralph Adolphs ('Caltech'); Itzhak Fried ('UCLA')</i>		Department of Neurosurgery	UCLA
Projects:			
- Single-neuron recording in humans viewing emotional scenes.			
- Eye-tracking of healthy controls and subjects with prosopagnosia watching social scenes (with Brad Duchaine at UCL and Doris Tsao).			
- Studying dreams and attention during sleep, in humans (single-neuron recording) and mice (Optogenetics) (with Asya Rolls at Stanford).			
2005 - 2009	PhD in Computational Neuroscience	California Institute of Technology ('Caltech')	
Advisor: <i>Christof Koch</i>			
Thesis: Competition and Attention in the human brain			
T.A: <i>'Introduction to Computational Neuroscience' (CNS 100), 'Neural Computation' (CNS 187), 'The neuronal basis of consciousness' (CNS 120), 'Brains, Minds and Society' (CNS 102)</i>			
Affiliated with the 'Interdisciplinary Center for Neural Computation ('ICNC') at the Hebrew University of Jerusalem			
2006	Bachelors in Fine Arts (incomplete)	Art Center College of Design	
Studies in the Digital Media program in the <i>Art Center at Night</i> program.			
2001	M.A. in Philosophy of Science	Tel-Aviv University	
Advisor: <i>Isaac Ben-Israel</i>			
Thesis: <i>"On the mind-body problem – without the mind. A scientific explanation to Consciousness".</i>			
Graduated summa cum laude.			
1998 – 2000	B.Sc. in Physics	Tel-Aviv University	
Extensive amount of interdisciplinary studies in Biology, Medicine, Computer Science, Law, Literature, History, Film, Psychology, Linguistics.			
T.A: <i>'Theoretical methods in Physics' (Physics, 2nd year), 'Internet security' (Computer Science, 3rd year)</i>			

Honors and Awards

2010 – Winner of the 'Moth' Grand SLAM story telling competition (and 4 times 'Moth' Story SLAM winner)
2010 – Winner of the 'Reason' project short film competition, for the film: *"Imagine"*
2010 – Winner of the VSS program graphics competition
2009 – Work selected as 'hot topic' in the Society for Neuroscience annual conference
2009 – Good Clinical Practice (GCP), UCLA
2007 – Best poster, Eye-Tracking Research and application conference
2005 – Winner of the Weizmann Institute short-stories competition in memory of Ofer Lider
2004 – Awarded full-tuition scholarship for the year 2005. *Tel-Aviv University*
2004 – Winner of 1st prize in the Jerusalem film festival. Category: 'Short films', for the film: *"Parrots"*
2003 – President Scholarship for Excellent Ph.D. students. *4 Years scholarship. Bar-Ilan University*
2001 – Master's thesis, summa cum laude
1997 – Israeli Defense Forces: award for contributing to a top-secret intelligence-gathering project
1994 – Ministry of Education award for an excellent dissertation ('Artificial Intelligence')

Member Association for the Scientific Study of Consciousness (ASSC), Society of Neuroscience (SfN), Skeptics Society, Cognitive Neuroscience Society (CNS), Vision Sciences Society (VSS)

Reviewer Nature, NIPS, Journal of Neuroscience, Journal of Vision, Vision Research, Perception, Lecture Notes in Computer Science (LNCS), European Association for Computer Graphics (EACG), Cognitive Neurodynamics, Journal of Computer Science and Technology and others.

Professional Experience

Summary of technical qualifications (previously working as a Security Consultant for various high-tech companies)

- Extensive experience of research and development in cryptanalysis, application security and networks level security.
- Experience in Application Penetration Testing.
- Proven ability to analyze, plan, and manage projects.
- Combine an ability to understand core technologies and business ramifications.
- Hands on experience with design, coding and testing of products.
- Has an aptitude for training and customer relation assignments.
- Recommendations and references from customers, managers, and colleagues can be received upon demand.

2009 – 2010	Consultant	Vivvva
Providing technical and business assistance for a newly established fashion start-up company.		
2003 – 2005	Hacker	iMPERVA
Security consultancy and research in the Application Defense Center. Performing penetration tests for banks, governmental sites and companies. Writing security advisories and probing security holes while suggesting innovative defense mechanisms. Assisting the company's pre-sales, and the marketing team.		
2002 - 2003	Customer Trainer, Product Architect	TTI Telecom
In charge of designing a new Servers and Applications Management system, for a big Chinese 3G provider. Focal point for company security matters, in charge security-related proposals and bids, and internal/external security queries. Customer trainings on Telephony Networks/Cellular Networks all-over the world (Europe, U.S., Far-East, Australia).		
2000 – 2002	R&D Trainer	Check Point Software Technologies
Senior trainer for the entire R&D department. Training on various technological subjects. In charge of the R&D certification exams (CCSA, CCSE), and of the courseware authoring. Part of several projects involving marketing, customer relations, and technical papers publication.		
2000	Inventor	S.I.T
Leading workshops and guiding groups towards products enhancements and Systematic Inventive Thinking.		
1998 - 2000	Software Developer, Team Leader	Log-On Software
Worked for various Israeli start-up companies on behalf of Log-On. Programmed in various platforms and technologies. In charge of defining, planning and supervising all aspects of the products, as well as the design of the GUI.		

Periodically			
Freelance Trainer	Teaching programming languages, design patterns, Unix administration and various security courses.	Science consulting	Providing scientific consultancy for films on behalf of the <i>American Film Institute (AFI)</i>
Columnist	Weekly column for 'People and Computers' journal.	Security forum manager	Managed <i>John Bryce's</i> security forum.
Patents consultant	Writing patents for medical start-up companies		

Army

1995 - 1998	Intelligence	Israeli Defense Forces (IDF)
Participant in a special project for outstanding youth (" <i>Haman Talpiyot</i> ") after extensive training. Directed classified projects requiring systematic research and analysis, and original solutions for particularly difficult problems, which made use of logical skills, languages-learning capabilities, and knowledge of communication protocols and encryption schemes. In the last year - built the unit's web-based knowledge base.		

Technical Skills

OS: Windows, Unix, Linux, MF
Programming: C/C++, MFC, VB, ASP, PHP, JavaScript, Python, Perl, csh, Pascal, Assembly, CGI, CSS, VRML, WML, FORTRAN, Matlab;
 Networking; Database administration.
Security: Application penetration testing, Security Code Review and analysis, Security System Acceptance, Auditing, Firewalls and IDS administration, security and cryptography training.
Multimedia: Maya, Photoshop, Flash, 3D Max, Premiere, AVId, FreeHand, CorelDraw, Combustion, After Effects, Illustrator and others.

Other

Story teller.
 Pianist, filmographer, painter.
 Writer of short stories, Comics, and a Hebrew novel: '*Disease*'.
 Participated in TV series while studying at the School of Arts (1984-1992): '*Catching Heads*'
 Holds an air pilot certificate. Cliff climber, Scuba Diver.
 Representative at the Student Council - three consecutive terms. At the final term – the Council's Vice President.

Selected Publications

peer-reviewed, **under review**, **conference abstracts**, **invited talks**, **book chapters**

Theses

(2009) – ‘Competition and Attention in the human brain’ - *Ph.D thesis, California Institute of Technology.*

(2002) – ‘On the mind-body problem – without the mind’ - *Master's thesis, Tel-Aviv University.*

Direct recording from the Human Brain

(2011) – ‘Seeing with eyes closed’ – *Venice Art Biennale, Venice, Italy*

(Accepted) – ‘A category-specific response to animals in the right human amygdala’ – Florian Mormann Julien Dubois, Simon Kornblith, Milica Milosavljevic, **Moran Cerf**, Matias Ison, Naotsugu Tsuchiya, Alexander Kraskov, Rodrigo Quian Quiroga, Ralph Adolphs, Itzhak Fried, Christof Koch, *Nature Neuroscience.*

(Accepted) – ‘Selectivity of Pyramidal cells and interneurons in the Human Medial Temporal Lobe’ – Matias J. Ison, Florian Mormann, **Moran Cerf**, Christof Koch, Itzhak Fried and Rodrigo Quian Quiroga, *Journal of Neurophysiology.*

(2011) – ‘How many minds are there in your brain?’ – *Towards a science of consciousness, Stockholm, Sweden*

(2011) – ‘Projecting thoughts to external devices using single neurons recordings in human brains’ – *Zhejiang University, Hangzhou, China*

(2011) – ‘Studying consciousness using direct recording from single neurons in the human brain’ - **Moran Cerf**, Michael Mackay. In: “*Characterizing Consciousness*” (Research and Perspective in Neuroscience), Editors: Stanislas Dehaene and Yves Christen; Publisher: Springer.

(2010) – ‘On-line, voluntary control of human temporal lobe neurons’ – **Moran Cerf**, Nikhil Thiruvengadam, Florian Mormann, Alexander Kraskov, Rodrigo Quian-Quiroga, Christof Koch and Itzhak Fried, *Nature, Volume 467, Issue 7319, Pages 1104-1008*

(2010) – Faculty 1000 rating ‘**11**’

‘**Exceptional**’ (10) by Phil Corlett and Paul Fletcher, *F1000.com/6320961*

‘**Recommended**’ (6) by Niklas Wilming and Peter König, *F1000.com/5895957*

For additional scientific reviews (including *Nature Reviews Neuroscience*) and media coverage (with over 120 media resources, including the BBC, Times, Wired and more) visit <http://www.morancerf.com/fading>

(2010) – ‘Neural correlates of emotions regulation in the human brain’ – **Moran Cerf**, Ralph Adolphs, Itzhak Fried, *Cognitive Neuroscience Society (CNS).*

(2010) – ‘Projecting thoughts using the decoded activity of single neurons in the human brain’ – **Moran Cerf**, Nikhil Thiruvengadam, Florian Mormann, Alexander Kraskov, Rodrigo Quian-Quiroga, Christof Koch & Itzhak Fried, *Towards a Science of Consciousness, 2010*

(2010) – ‘Single-neuron recording in the human brain’ – *Princeton*

(2010) – ‘Voluntary control of single neurons in humans’ – *University College of London (UCL)*

(2010) – ‘Real time decoding of neural activity for projection of thoughts to external devices’ – *Harvard*

(2010) – ‘Voluntary control of single MTL neurons by human thought’ – *M.I.T*

(2010) – ‘Responses of human medial temporal lobe neurons are modulated by stimulus repetition’ - Carlos Pedreira Gallego, Florian Mormann, Alexander Kraskov, **Moran Cerf**, Itzhak Fried, Christof Koch and Rodrigo Quian Quiroga, *Journal of Neurophysiology, Volume 103, Pages 97-107.*

(2009) – ‘Competition and attention in the human brain’ – *New York University.*

(2009) – ‘On-Line Voluntary Control of Single Neurons by Human Thought’ - **Moran Cerf**, Nikhil Thiruvengadam, Florian Mormann, Alexander Kraskov, Rodrigo Quian-Quiroga, Christof Koch, Itzhak Fried, *Society for Neuroscience (SfN 2010).*

(2008) - ‘Single neurons in the human MTL during visual working memory and rapid series visual presentation’ - Florian Mormann, Simon Kornblith, Rodrigo Quian-Quiroga, Alexander Kraskov, **Moran Cerf**, Christof Koch, Itzhak Fried, *Society for Neuroscience (SfN 2008).*

(2008) – ‘Latency and selectivity of single neurons indicate hierarchical processing in the human medial temporal lobe’ - Florian Mormann, Simon Kornblith, Rodrigo Quian Quiroga, Alexander Kraskov, **Moran Cerf**, Itzhak Fried, Christof Koch, *Journal of Neuroscience.*

(2007) – ‘Conscious control of a single neuron in the human MTL using imagery, visual and auditory feedback’ - **Moran Cerf**, Florian Mormann, Alexander Kraskov, Rodrigo Quian Quiroga, Itzhak Fried, Christof Koch, *Society for Neuroscience, (SfN 2007).*

(2007) - ‘Dynamics of selective single neurons in the human MTL in a visual working memory task’ - Florian Mormann, Rodrigo Quian-Quiroga, Alexander Kraskov, **Moran Cerf**, Itzhak Fried, Christof Koch, *Society for Neuroscience (SfN 2007).*

Vision

(2011) – ‘Comparing social attention in autism and amygdala lesions: effects of stimulus and task condition’ –Elina Birmingham, **Moran Cerf**, Ralph Adolphs, *Social Neuroscience, special issues: Neuropsychiatric disorders.*

(2010) – [‘There’s plenty of time at the bottom: Evidence for distinct mechanisms driving eye movements’](#) – **Moran Cerf**, Michael MacKay, Christof Koch.

(2010) – [‘There’s plenty of time at the bottom: the time spent before a saccade is generated is a complex interplay of competing saliency and decision’](#) – **Moran Cerf**, Michael MacKay, Christof Koch, *Vision Sciences Society (VSS)*.

(2010) – [‘Eye tracking to social scenes: comparisons between amygdala lesions and autism’](#) - Elina Birmingham, **Moran Cerf**, Ralph Adolphs, *Cognitive Neuroscience Society (CNS)*.

(2009) – [‘Faces and text attract gaze independent of the task: Experimental data and computer model’](#) - **Moran Cerf**, Paxon Frady, Christof Koch, *Journal of Vision*, 9(12):10, 1-15.

(2009) – [‘The role of amygdala in orienting attention to eyes within complex social scenes’](#) - Elina Birmingham, **Moran Cerf**, Ralph Adolphs, *Vision Sciences Society (VSS)*.

(2008) – [‘Subjects’ inability to avoid looking at faces suggests bottom-up attention allocation mechanism for faces’](#) - **Moran Cerf**, Paxon Frady, Christof Koch, *Society for Neuroscience (SfN 2008)*.

(2008) – [‘Distinct roles for eye and head movements in selecting salient image parts during natural exploration’](#) - Wolfgang Einhäuser, Frank Schumann, Johannes Vockeroth, Klaus Bartl, **Moran Cerf**, Jonathan Harel, Erich Schneider, Peter König, *Annals of the New York Academy of Sciences*, Volume 1137.

(2008) – [‘Decoding what people see from where they look: predicting visual stimuli from scanpaths’](#) - **Moran Cerf**, Jonathan Harel, Alex Huth, Christof Koch, *Lecture Notes in Artificial Intelligence, LNAI 5395, Springer*.

(2008) – [‘Decoding what people see from where they look: predicting visual stimuli from scanpaths’](#) - **Moran Cerf**, Jonathan Harel, Alex Huth, Wolfgang Einhäuser, Christof Koch, *Proceedings of the International Workshop on Attention and Performance in Computational Vision, (WAPCV 2008)*.

(2008) – [‘True and Spurious Face Detections Attract Attention during Free Exploration’](#) - Wolfgang Einhäuser, Frank Schumann, Johannes Vockeroth, Klaus Bartl, **Moran Cerf**, Jonathan Harel, Christof Koch, Erich Schneider, Peter König, *Proceedings of the International Workshop on Attention and Performance in Computational Vision, (WAPCV 2008)*.

(2008) – [‘Using semantic content as cues for better scanpath prediction’](#) - **Moran Cerf**, E. Paxon Frady, Christof Koch, *Proceedings of the symposium on Eye tracking research & applications, (ETRA 2008)*.

(2007) – [‘Observers are consistent when rating image conspicuity’](#) - **Moran Cerf**, Dan R. Cleary, Rob J. Peters, Wolfgang Einhäuser, Christof Koch, *Vision Research*, Volume 47, Issue 27, Pages 3052-3060.

(2007) – [‘Predicting human gaze using low-level saliency combined with face detection’](#) - **Moran Cerf**, Jonathan Harel, Wolfgang Einhäuser, Christof Koch, *Advances in Neural Information Processing Systems, Vol. 21 (NIPS 2007)*.

Neuro-Economics

(2008) - [‘What Matters is Attention not Intention: Insights from Computational Neuroscience of Vision’](#) - Milica Milosavljevic & **Moran Cerf**, *International Journal of Advertising*, Volume 27, Number 3.

Philosophy of Science

(2005) - [‘What is it like to be Beethoven?’](#) - **Moran Cerf**, Avshalom C. Elitzur, World Scientific Publishing Co.

Art

(2011) – [‘On Imagery and projecting thoughts’](#) – **Moran Cerf**. In: “Seeing with Eyes closed”, Editors: Ivana Franke and Ida Momennejad.

Patents

(2008) – [Magnetic Breather Pump for delivery of Chemotherapeutic agents into the brain](#) – Pharmaco-Kinesis. Filed July, 2008.

(2007) - [‘Automatic Prediction of Human Gaze in Visuals by Localizing High-Level Elements’](#) - Christof Koch, **Moran Cerf**, Paxon Frady. Provisional patent application CIT-5033-P, filed November 19, 2007.

Security Research

(2005) - [‘File Access and Denial of Service Vulnerabilities in Business Objects “Crystal Report”’](#) – **Moran Cerf**, Amichai Shulman, *Bugtraq*. ID: 10260

(2004) – [‘How safe is it out there ?’](#) – **Moran Cerf**, Amichai Shulman, *Security Focus*

(2004) – [‘SuperVeda Penetration Test. Demonstration of a website hacking’](#) – **Moran Cerf**, Amichai Shulman, *Security Focus*

Journal

‘People and Computers’, Ma’ariv (Israeli leading daily news), Ha’aretz and more. (see www.morancerf.com for an updated list)

Current projects

- Neural correlates of 'engagement' in humans.
- Neural correlates of 'high-level' complex emotions in humans, using single-neuron recording.
- Visual attention allocation in individuals with neurological and psychiatric disorders – with Ralph Adolphs (autism, amygdala-lesion), Lynn Paul (AgCC), Brad Duchaine (Prosopagnosia) and Christof Koch
- Attention allocation to faces in prosopagnosia subjects showing no face area - with Brad Duchaine and Doris Tsao
- Study of the amygdala as the neural correlate of the experience of fear – with Ralph Adolphs (empathy and complex emotions regulation), Elina Birmingham (eye-tracking of amygdala-lesion orienting to eyes/mouth), Christof Koch (neural correlate of the experience of fear) and Itzhak Fried (single neuron recordings during exposure to emotional scenes)
- Study of complex emotion ('happiness') in humans
- Applications of attention studies in neuroscience to marketing (with Dr. Milica Milosavljevic) and accounting (with Prof. Yaniv Konchitchki)
- Modeling of competition between imagery and vision in the medial temporal lobe – with Christof Koch
- Studies of rapid bottom-up attention mechanism using the saliency model – with Michael MacKay and Christof Koch
- Dreams and consciousness mechanisms during sleep in humans (using single neuron recordings with Itzhak Fried) and mice (using optogenetics with Asya Rolls)