Minjung Kim

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Professional Experience

2020-	Research Scientist Applied Perception Science Team, Reality Labs, Meta Platforms, Inc.
2019-2020	Postdoctoral Researcher Dr. Rafal Mantiuk, Rainbow Group, University of Cambridge
2017-2019	Postdoctoral Researcher Dr. Marianne Maertens, Fachgruppe Modellierung kognitiver Prozesse, Technische Universität Berlin
2016-2017	Postdoctoral Researcher Dr. Richard Murray, York University Centre for Vision Research, Toronto
2005-2009	Laboratory Manager Dr. Ronald Rensink, Visual Cognition Lab, University of British Columbia

Education

2016	 Doctor of Philosophy in Experimental Psychology (Cognition and Perception Program) with Minor in Quantitative Psychology Dr. Laurence Maloney, New York University Dr. Richard Murray, York University, Toronto Dissertation: Mid-Level Vision for the Perception of Lighting
2014 (part of PhD)	 Master of Arts in Psychology (Cognition and Perception Program) Dr. Laurence Maloney, New York University First-year paper: Lightness Constancy by Interpolation under Simple and Complex Light Fields Second-year paper: The Perception of Lighting as Sampling and Interpolation
2011	Master of Arts in Psychology (Brain, Behaviour, and Cognitive Sciences Program) Dr. Richard Murray, York University, Toronto • Thesis: Shape and Luminance Cues for the Visual Perception of Glow
2008	 Bachelor of Science in Cognitive Systems (Brain and Cognition Stream) Dr. Ronald Rensink, University of British Columbia Project: Design Principles in Navigation

Publications

Journal Articles

Desimone, K., **Kim, M.**, & Murray, R. F. (2020). Numerosity adaptation can be dissociated from density adaptation. *Psychological Science*. doi:/10.1177/0956797620956986

Wuerger, S., Ashraf, M., Kim, M., Martinovic, J., Perez-Ortiz, M. & Mantiuk, R. (2020). Spatio-chromatic contrast sensitivity under mesopic and photopic light levels. *Journal of Vision*, 20(4):23, 1-26. doi: 10.1167/jov.20.4.23.

Kim, M., Gold, J. M. & Murray, R. F. (2018). What image features guide lightness perception? *Journal of Vision*. *18*(13):1. doi: 10.1167/18.13.1.

Kim, M., Wilcox, L. M. & Murray, R. F. (2016). Perceived 3D shape toggles perceived glow. *Current Biology. 26*(9), 350-351. Featured on YFile:

http://yfile.news.yorku.ca/2016/05/10/study-finds-visual-perception-of-glow-can-be-toggled-on-and-off/

Conference Talks

Kim, M., Lian, T., Ghahghaei, S. (2024). Why should we study reading in the age of extended reality (XR)? *The Vision Science of Digital Readability: Community Building Workshop*. May 17, 2024. (Invited)

Pelli, D.G., Pombo, M. Kim, M. (2024). Comfort and crowding in reading fonts. *The Vision Science of Digital Readability: Community Building Workshop*. May 17, 2024. (Invited)

Zhang, L., Kim, M., Hillis, J. and Lian, T. (2023). Towards image-computable visual text quality metric with deep neural networks. *IS&T Image Quality and System Performance*. January 16-18, 2023.

Kim, M., Azimi, M. and Mantiuk, R. K. (2021). Color Threshold Functions: Application of Contrast Sensitivity Functions in Standard and High Dynamic Range Color Spaces. *IS & T Human Vision and Electronic Imaging (HVEI)*. January 11-28, 2021.

Kim, M. (2020). What can we see on a high dynamic range display? Oxbridge Women in Computer Science, December 7, 2020, Cambridge, UK. https://oxbridgewomenincs8.wixsite.com/2020

Kim, M., Azimi, M. and Mantiuk, R. K. (2020). Perceptually motivated model for predicting banding artefacts in high-dynamic range images. 28th Color and Imaging Conference. November 4-19, 2020.

Ashraf, M., Wuerger, S., **Kim, M.**, Martinovic, J. and Mantiuk, R. K. (2020). Spatio-chromatic contrast sensitivity across the lifespan: interactions between age and light level in high dynamic range. 28th Color and Imaging Conference. November 4-19, 2020.

Mantiuk, R. K., **Kim, M.**, Ashraf, M., Xu, Q., Luo, M. R., Martinovic, J. and Wuerger, S. M. (2020). Practical color contrast sensitivity functions for luminance levels up to 10000 cd/m2. 28th Color and Imaging Conference. November 4-19, 2020.

Kim, M., Ashraf, M., Perez-Ortiz, M., Martinovic, J., Wuerger, S. and Mantiuk, R. K. (2020). Contrast sensitivity functions for HDR displays. *Inaugural London Imaging Meeting*. September, 30 2020 - October 1, 2020.

Wuerger, S., Ashraf, M., Mantiuk, R. K., **Kim, M.**, and Martinovic, J. (2019). Luminance and Chromatic Contrast Sensitivity at an Extended Luminance Range. Oral Presentation at the 25th Symposium of the International Colour Vision Society (ICVS), July 5-9, 2019, Riga, Latvia. https://www.icvs2019.lu.lv/

Kim, M., Aguilar, G. & Maertens, M. (2018). Michelson contrast for transparency perception in scenes with multiple luminances. *Computational and Mathematical Models in Vision (Modvis)*. St. Pete Beach, Florida, USA. May 16-18, 2018.

Maertens, M., Kim, M. & Aguilar, G. (2018). A contrast-based model of achromatic transparency. *Computational and Mathematical Models in Vision (Modvis)*. St. Pete Beach, Florida, USA. May 16-18, 2018.

Kim, M., Gold, J. M. & Murray, R. F. (2018). What visual features are important to lightness perception? *Scottish Vision Group Meeting*. Glencoe, UK. March 16-18, 218.

Murray, R. F., **Kim, M.** & Gold, J. M. (2017). A reverse correlation test of computational models of lightness perception. *Computational Cognitive Neuroscience*. New York, NY. September 6-8, 2017.

Kim, M., Gold, J. M. & Murray, R. F. (2017). Classification images for understanding lightness perception. *European Conference on Visual Perception*. Berlin, Germany. Aug. 27-31, 2017.

Murray, R. F, Desimone, K. & Kim, M. (2017). How do we count at a glance? *Annual Meeting of the Vision Sciences Society*. St. Pete Beach, Florida, USA. May 19-24, 2017.

Kim, M., Gold, J. M. & Murray, R. F. (2017). Using classification images to understand models of lightness perception. *Computational and Mathematical Models in Vision (Modvis)*. St. Pete Beach, Florida, USA. May 17-19, 2017.

Murray, R. F., Wilder, J. D., & Kim, M. (2016). Human vision uses a flexible model of lighting variations. *European Conference on Visual Perception*. Barcelona, Spain, August 28 - September 1, 2016.

Kim, M., Wilcox, L. M. & Murray, R. F. (2016). Perceived 3D shape toggles perceived glow. *Annual Meeting of the Vision Sciences Society*. St. Pete Beach, Florida, USA. May 13-18, 2016.

Kim, M. (2016). Perceived 3D shape toggles perceived glow. Second Annual Student Research Symposium of the Neuroscience Association at York. Toronto, Canada. March 4, 2016.

Murray, R. F. & Kim, M. (2015). Lightness constancy via Bayesian anchoring. *Annual Interdisciplinary Conference*. Jackson Hole, Wyoming, USA. February 1-6, 2015.

Kim, M. & Murray, R. F. (2011). 3D surface shape and the appearance of glow. *Annual Meeting of the Vision Sciences Society*. Naples, Florida, USA. May 6-11, 2011.

Conference Abstracts

Pombo, M., Kim, M., Pelli, D. G. (2023). Crowding reduces reading speed and comfort. Poster Presentation at *European Conference of Visual Perception*, Paphos, Cyprus, August 27-31, 2023.

Pombo, M., Kim, M., Pelli, D. G. (2023). Comfort vs. Beauty of Fonts. Poster Presentation at *Visual Science of Art Conference*, Paphos, Cyprus, August 24-26, 2023.

Ashraf, M., Wuerger, S. M., Mantiuk, R. K., **Kim, M.**, Saunderson, H., and Martinovic, J. (2019). Age-related changes in spatio-chromatic contrast sensitivity at mesopic and photopic light levels. Poster Presentation at *Women in Vision UK Meeting*, December 13, 2019, Belfast, UK. Retrieved from https://www.networcuk.com/Home/WomenInVision

Ashraf, M., Wuerger, S., Mantiuk, R. K., **Kim, M.**, and Martinovic, J. (2019). Luminance and chromatic contrast sensitivity for extended range of light levels. Poster Presentation at *Liverpool Neuroscience Day (LND)*, June 14, 2019, Liverpool, UK. https://lng.org.uk/event/lnd2019/

Ashraf, M., Wuerger, S. M., Mantiuk, R. K., **Kim, M.**, & Martinovic, J. (2019). Luminance-dependent spatio-chromatic sensitivity: from detection to appearance. Poster Presentation at *Leeds Colour Conference*, July 29-30, 2019, Leeds, UK. http://stephenwestland.co.uk/colour2019/

Kim, M., Aguilar, G. & Maertens, M. Understanding the reduction in Michelson contrast for the perception of transparency. Presented at the *European Conference on Visual Perception*. Trieste, Italy. August 26-31, 2018.

Aguilar, G., **Kim, M.** & Maertens, M. Estimating perceived transparency using conjoint measurement. Presented at the *European Conference on Visual Perception*. Trieste, Italy. August 26-31, 2018.

Kim, M., Gold, J. M. & Murray, R. F. Classification images for understanding lightness perception. Presented at *Centre for Vision Research International Conference on Vision in the Real World*. Toronto, Canada. June 13-16, 2017.

Kim, M., Wilcox, L.M. & Murray, R. F. Perceived 3D shape toggles perceived glow. Presented at the *Perception Representation, Illumination, Shape, and Material* Workshop. Schloss Rauischholzhausen, Germany. October 19-23, 2016.

Kim, M., Gold, J. M. & Murray, R. F. Classification images reveal that local grouping within lighting frameworks drives the argyle illusion. Presented at *Centre for Vision Research International Conference on Perceptual Organization*. Toronto, Canada. June 23-26, 2015.

Kim, M., Gold, J. M. & Murray, R. F. Classification images reveal that local grouping within lighting frameworks drives the argyle illusion. Presented at the *Annual Meeting of the Vision Sciences Society*. St. Pete's Beach, Florida, USA. May 15-20, 2015.

Kim, M., Ng, K. & Maloney, L.T. Light field interpolation across an insulating white border. Presented at the *Annual Meeting of the Vision Sciences Society*. St. Pete's Beach, Florida, USA. May 16-21, 2014.

Kim, M. & Maloney, L. T. Interpolation of illuminant cues across scenes with light fields induced by a mixture of a proximal and a collimated light source. Presented at the *European Conference on Visual Perception*. Bremen, Germany. August 25-29, 2013.

Kim, M., Schüür, F. & Maloney, L. T. Interpolation of illuminant cues across scenes with light fields induced by a mixture of a proximal and a collimated light source. Presented at *Centre for Vision Research International Conference on Interactions in Vision*. Toronto, Canada. June 26-29, 2013.

Kim, M. & Murray, R. F. The influence of shape on perceived glow. *Centre for Vision Research International Conference on Plastic Vision*. Toronto, Canada. June 15-18, 2011.

Kim, M. & Murray, R. F. Glow from shape and shape from glow. *Workshop on the Perception of Material Properties*, Schloss Rauischholzhausen, Germany. June 1-5, 2011.

Kim, M. and Rensink, R. A. Image transitions: the invariance of mental representations to visual transformations. *Banff Annual Seminar in Cognitive Science*, Banff, Canada. May 2-3, 2008.

Chao, W.O., Ha, D., Ho, K., Kaastra, L., Kim, M., Wade, A. & Fisher, B. The Bricolage. *IEEE Symposium on Visual Analytics Science and Technology*, Sacramento, California, USA. Oct. 30-Nov. 1, 2007.

Ha, D., **Kim, M.,** Wade, A., Chao, W.O., Ho, K., Kaastra, L., Fisher, B. & Dill, J. From tasks to tools: A field study in collaborative visual analytics. *IEEE Symposium on Visual Analytics Science and Technology*, Sacramento, California, USA. Oct. 30-Nov. 1, 2007.

Professional Activity

Professional Community Service

2023- IS&T Member of the Board Vice President at large

2021- IS&T Color & Imaging Conference Committee Member Technical Program Co-Chair (2024, Montreal)

Workshop Co-Chair (2023, Paris) Interactive Paper Co-Chair (2021, online; 2022, Scottsdale) Social Program Co-Chair (2021, online; 2022, Scottsdale) Session Moderator (2021-2024)

2019 Conference Co-organizer

Scottish Vision Group Meeting, Isle of Skye, Scotland

- · Proposed and organized a panel discussion on virtual reality and the future of vision research
- · Obtained sponsorship funding from MDPI Vision and Facebook Reality Labs (Oculus)

2013- Journal and Conference Reviewer

Psychology: Journal of Vision, Attention, Perception & Psychophysics Computer science: IEEE Visualization, ACM Symposium on Applied Perception, IS&T Color & Imaging Conference Cross-disciplinary: PLOS One

Teaching Experience

2014-2015Teaching Assistant, Graduate Level
Computer Programming for Experimental Psychology (2014-2015, Term 1)
Statistical Modelling of Perception and Cognition (guest lecturer)

2007-2010	Teaching Assistant, Undergraduate Level	
	Undergraduate Statistics (2010, Term 1)	
	Perception (2009-2010, Term 2; 2013-2014, Term 1)	
	Research Methods in Cognitive Systems (2008-2009, Term 1)	
	Introduction to Cognitive Systems (2007-2008, Term 1 & Term 2)	

2009-2013 Private Tutor Introductory statistics (2009, 2011) Perception (2013)

Awards & Distinctions

Fellowships

2011-2016	Henry M. MacCracken Award, New York University
2011	Presidential Fellowship (declined), Rutgers, the State University of New Jersey

Awards

2016	Vision Sciences Society Student Travel Award, Elsevier/Vision Research
2013	Dean's Student Travel Grant, New York University
2012	Certificate of Academic Excellence, Canadian Psychological Association
2011	Thesis Prize Nomination, York University
2009	Graduate Student Entrance Scholarship, York University
2008	Quinn Research Travel Grants for Undergraduates, University of British Columbia
2007	Best Debriefing Award, IEEE Symposium on Visual Analytics Science and Technology
2003-2004 2006-2007	Dean's Honour Roll, University of British Columbia
2003-2004	Undergraduate Scholarship Program, University of British Columbia

Course Participation by Competition or by Invitation

2014	Computational Neuroscience: Vision Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA
2013	Science Communication Workshop, Advanced Level Arthur L. Carter Journalism Institute, New York University, NY, USA
2008	Vision Science Summer School York University Centre for Vision Research, Toronto, Canada

Public Engagement

Scientific Outreach

2023-2024	Outreach Organizer & Presenter
	Wapato School District, WA
	Vancouver School District. Canada

2016-2017 Judge (Gr. 6/7 and 8/9 divisions) Toronto Science Fair

2013-2014 Volunteer

- Neuroscience Outreach Group at NYU (NOGN)
- · NYU Brain Fair, Brain Awareness Week
- · Elementary school and middle school outreach
- · American Museum of Natural History outreach

Popular Science Communication

Kim, M. (2015, June 26). Highlights from the 2015 Meeting of the Vision Sciences Society. The Public Library of Science: Blogs: The Student Blog. Retrieved from http://blogs.plos.org/thestudentblog/2015/06/26/vssmeeting/

Kim, M. (2014, Feb. 4). Not So Ordinary: A Tale of Unsung Scientific Heroes. [Review of the book Ordinary Geniuses: How Tow Mavericks Shaped Modern Sciences, by Gino Segrè]. The Public Library of Science: Blogs: The Student Blog. Retrieved from

http://blogs.plos.org/thestudentblog/2014/02/04/ordinary-tale-unsung-science-heroes/

Kim, M. (2013, Sept. 10). The Scientific Method: It's OK to Blunder. [Review of the book Brilliant Blunders: from Darwin to Einstein: Colossal Mistakes by Great Scientists That Changed Our Understanding of Life and the Universe, by Mario Livio]. The Public Library of Science: Blogs: The Student Blog. Retrieved from http://blogs.plos.org/thestudentblog/2013/09/10/the-scientific-method-its-ok-to-blunder/

References

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Richard F. Murray Professor Department of Psychology Centre for Vision Research York University <u>rfm@yorku.ca</u> Eero P. Simoncelli Professor Center for Neural Science New York University eero.simoncelli@nyu.edu