

Yelda Semizer

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RESEARCH INTERESTS

Computational models of visual search, peripheral vision, visual clutter, attention, signal detection theory, ideal observer models, Bayesian inference, UX

EDUCATION

Rutgers University, New Brunswick, NJ, USA

Ph.D., Cognitive Psychology (*advisor*: Melchi M. Michel) May 2019
M.S., Statistics (*advisor*: John Kolassa) Oct 2016
M.S., Cognitive Psychology (*advisor*: Melchi M. Michel) Oct 2015

Bogazici University, Istanbul, Turkey

M.A., Psychological Sciences (*advisor*: Aysecan Boduroglu) Jun 2013
B.A., Psychology (*Magna Cum Laude*) Jan 2010

University of Edinburgh, Edinburgh, Scotland, UK

Visiting Student Jul-Sep 2009

University of Michigan, Ann Arbor, MI, USA

Exchange Student Sep-Dec 2008

WORK EXPERIENCE

MIT CSAIL, Cambridge, MA, USA

Postdoctoral Associate 2019 - *pres.*

Department of Psychology, Rutgers University, New Brunswick, NJ, USA

Teaching Assistant 2013 - 2019

Department of Psychology, Bogazici University, Istanbul, Turkey

Research and Teaching Assistant 2011 - 2013

Language and Communication Laboratory, Koc University, Istanbul, Turkey

Lab Director and Research Assistant 2009 - 2010

CERTIFICATES

Bernstein Center for Computational Neuroscience Tubingen, Germany

Computational Vision Summer School Jul. 2019

Rutgers University, New Brunswick, NJ, USA

Center for Online & Hybrid Learning and Instructional Technologies May 2018

Cold Spring Harbor Laboratory, NY, USA

Computational Neuroscience: Vision July 2016

Rutgers University, New Brunswick, NJ, USA

Cognitive Science Center (*advisor*: Eileen Kowler) Oct. 2015

HONORS & AWARDS

Glushko Travel Award, Cognitive Science Society	2018
Elsevier/ <i>Vision Research</i> Travel Award for Excellence in Vision Science Research	2018
Travel Award, School of Graduate Studies, Rutgers University	2018
Travel Award, Women in Statistics, Data Science and -OMics	2017
Pre-Dissertation Award, Rutgers University	2017
Professional Development Fund, Rutgers University	2016, 2017, 2018
Travel Award, The Society for Mathematical Psychology	2016
Helmsley Fellowship, Helmsley Charitable Trust, Cold Spring Harbor Laboratory	2016
Special Study Award, Rutgers University	2016
Young Scientist Travel Award, Cognitive Science, Indiana University	2016
Travel Award, Department of Psychology, Rutgers University	2015, 2016
Travel Award, Graduate School of New Brunswick, Rutgers University	2015
APA Division 3 Best Psychonomic Society Poster Award Finalist	2015
The Scientific & Technological Research Council National Scholarship	2010 - 2012
ERASMUS Work/Internship Program Scholarship	2009
Merit Scholarship, Bogazici University, Istanbul	2006 - 2010

PUBLICATIONS

- Semizer, Y., & Michel, M. M.** (2019). Natural image clutter degrades overt visual search performance independently of set size. *Journal of Vision*, 19(4):1, 1–16.
- Semizer, Y., Michel, M. M., Evans, K. K., & Wolfe, J. M.** (2018). Texture as a diagnostic signal in mammograms. In *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*, Madison, WI: Cognitive Science Society (pp. 1043–1048).
- Semizer, Y., & Michel, M. M.** (2017). Intrinsic position uncertainty impairs overt search performance. *Journal of Vision*, 17(9):13, 1–17.
- Semizer, Y., & Michel, M. M.** (*in prep*). The contributions of search target category and exemplar appearance to visual clutter.
- He, X., Kleene, N., Persaud, K., **Semizer, Y.**, & Tanrikulu, O. D. (*in prep*). Visual search for multiple targets in probabilistic environments.
- Semizer, Y., & Boduroglu, A.** (*in prep*). Representing visual variance.

THESES

- Semizer, Y.** (2019). Position uncertainty, clutter, and performance in naturalistic search tasks. Rutgers University.
- Semizer, Y.** (2015). The role of peripheral position uncertainty on overt visual search. Rutgers University.
- Semizer, Y.** (2013). Representation of similar objects as a group: Effects of variance on ensemble representations. Bogazici University.

PRESENTATIONS

- Semizer, Y., Yu, D., Wan, Q., Balas, B., & Rosenholtz, R.** (November, 2019). Modeling Visual Crowding in Mazes. Talk to be presented at 60th Annual Meeting of the *Psychonomic Society*, Montreal, QC, Canada.
- Semizer, Y., Michel, M. M., Evans, K. K., & Wolfe, J. M.** (July, 2018). Texture as a diagnostic signal in mammograms. Talk presented at 40th Annual Meeting of the *Cognitive Science Society*, Madison, WI.
- Semizer, Y., Michel, M. M., Evans, K. K., & Wolfe, J. M.** (May, 2018). Textures as global signals of abnormality in the interpretation of mammograms. Talk presented at 17th Annual Meeting of *Vision Sciences Society*, St. Pete Beach, FL.
- Semizer, Y., & Michel, M. M.** (October, 2017). Visual search in natural images. Talk presented at *CogFest*, Rutgers University, New Brunswick, NJ.
- Semizer, Y., & Michel, M. M.** (May, 2017). Intrinsic position uncertainty and clutter in natural search tasks. Poster presented at 17th Annual Meeting of *Vision Sciences Society*, St. Pete Beach, FL.

- Semizer, Y., & Michel, M. M.** (May, 2017). Intrinsic position uncertainty and clutter in natural search tasks. Poster presented at 11th Annual *Perceptual Science and Cognitive Science Forum*, New Brunswick, NJ.
- Semizer, Y., & Michel, M. M.** (October, 2016). Searching in clutter: How fast can you find your keys? Talk presented at *Cognitive Science Graduate Student Association*, Rutgers University, New Brunswick, NJ.
- Semizer, Y., & Michel, M. M.** (August, 2016). Position uncertainty, clutter, and performance in naturalistic search. Poster presented at the 49th Annual Meeting of the *Society for Mathematical Psychology*, New Brunswick, NJ.
- Semizer, Y., Persaud, K., He, X., Kleene, N., & Tanrikulu, O. D.** (May, 2016). Visual search for multiple targets in probabilistic environments. Poster presented at 16th Annual Meeting of *Vision Sciences Society*, St. Pete Beach, FL.
- Semizer, Y., & Michel, M. M.** (May, 2016). Position uncertainty, clutter, and performance in naturalistic search. Talk presented at *CogFest*, Rutgers University, New Brunswick, NJ.
- Semizer, Y., & Michel, M. M.** (May, 2016). Position uncertainty, clutter, and performance in naturalistic search. Poster presented at the 10th Annual *Perceptual Science and Cognitive Science Forum*, New Brunswick, NJ.
- He, X., Kleene, N., Persaud, K., **Semizer, Y., & Tanrikulu, O. D.** (May, 2016). Search strategies for multiple probability targets. Poster presented at the 10th Annual *Perceptual Science and Cognitive Science Forum*, New Brunswick, NJ.
- Semizer, Y., & Michel, M. M.** (November, 2015). Intrinsic position uncertainty impairs overt search performance. Poster presented at the 56th Annual Meeting of the *Psychonomic Society*, Chicago, IL.
- Semizer, Y., & Michel, M. M.** (October, 2015). Peripheral position uncertainty in overt search. Talk presented at *CogFest*, Rutgers University, New Brunswick, NJ.
- Semizer, Y., & Michel, M. M.** (September, 2015). Visual search under the effect of intrinsic and extrinsic position uncertainty. Talk presented at *Cognitive Science Graduate Student Association*, Rutgers University, New Brunswick, NJ.
- Semizer, Y., & Michel, M. M.** (May, 2015). The role of peripheral position uncertainty on overt search. Poster presented at 15th Annual Meeting of *Vision Sciences Society*, St. Pete Beach, FL.
- Semizer, Y., & Michel, M. M.** (May, 2015). Peripheral position uncertainty as a limiting factor in overt search. Poster presented at the 9th Annual *Perceptual Science and Cognitive Science Forum*, New Brunswick, NJ.
- Semizer, Y., & Michel, M. M.** (May, 2014). The role of peripheral position uncertainty in overt search. Poster presented at the 8th Annual *Perceptual Science and Cognitive Science Forum*, New Brunswick, NJ.
- Semizer, Y., Kurutas, M., & Canbeyli, R.** (November, 2013). The effect of modulus on magnitude estimation of length and time. Poster presented at 21st Annual Meeting of *Object Perception, Attention, and Memory (OPAM)*, Toronto, Ontario.
- Semizer, Y., & Boduroglu, A.** (November, 2013). Representation of variance and its impact on mean size estimation in visual short-term memory. Poster presented at the 54th Annual Meeting of the *Psychonomic Society*, Toronto, Ontario.
- Semizer, Y., & Boduroglu, A.** (November, 2012). High variance in visual displays leads to overestimation in mean size estimation. Poster presented at the 53rd Annual Meeting of the *Psychonomic Society*, Minneapolis, MN.
- Semizer, Y., & Boduroglu, A.** (April, 2012). The effect of Ramadan fasting on cognitive performance. Poster presented at 17th *National Psychology Congress*, Istanbul, Turkey.
- Mustafaoglu, N., **Semizer, Y., & Tunalioglu, Z.** (September, 2011). The effect of exposure to idealized body images on food intake. Paper presented at the 5th *Psychology Graduate Students Congress*, Istanbul, Turkey.
- Semizer, Y., Candan, A., Unal, E., Naigles, L. R., & Kuntay, A.** (July, 2011). Do Turkish learners employ the accusative case in finding the agent? Poster presented at the Triennial *International Association for the Study of Child Language (IASCL) Congress*, Montreal, Canada.
- Engelhardt, P. E., Demiral, S. B., **Semizer, Y., & Ferreira, F.** (September, 2010). Do over-descriptions impair comprehension: An ERP study. Poster presented at 4th *Psychology Graduate Students Congress*,

Ankara, Turkey.

Akay, N., Kaya, P., & **Semizer, Y.** (July, 2010). Mirrors in the brain: Mirror neurons. Poster presented at the 15th *Psychology Students Congress*, Ankara, Turkey.

Engelhardt, P. E., Demiral, S. B., **Semizer, Y.** & Ferreira, F. (March, 2010). Over-specified referential expressions impair comprehension: An ERP study. Poster presented at the 23rd Annual Meeting of the *CUNY conference on Human Sentence Processing*, New York City, New York.

Ata, S., Kiziltan, N., **Semizer, Y.**, & Subasi, A. B. (July, 2010). Effect of language in background music on cognitive performance in extraverts and introverts. Paper presented at the 15th *Psychology Students Congress*, Ankara, Turkey.

INVITED TALKS

The Role of Position Uncertainty, Clutter, and Expertise in Visual Search Tasks. (2019). Visual Attention Lab, Brigham & Women's Hospital.

Position Uncertainty, Clutter, and Expertise in Visual Search (2018). Bogazici University, Istanbul.

Quantifying position Uncertainty and Clutter in Visual Search (2018). Computer Science and Artificial Intelligence Lab, Massachusetts Institute of Technology.

COMPUTER SKILLS

Python/NumPy/SciPy/Matplotlib/PsychoPy, MATLAB/PsychToolbox, R, Eyelink 1000/Eyelink Toolbox, E-prime, Direct RT, L^AT_EX, B^BT_EX, Praat, Audacity, Avid, SPSS, HTML/CSS.

RESEARCH EXPERIENCE

Graduate Research Experience

Perception Lab, Radiological Society of North America 2017 - 2018

PI's: Melchi M. Michel (Rutgers University), Karla K. Evans (York University), & Jeremy M. Wolfe (Harvard Medical School),

Project: Texture Statistics in Mammograms

Perceptual & Cognitive Science Center, Rutgers University 2015 - 2018

PI: Eileen Kowler,

Project: Modeling Search in Probabilistic Environments

Computational Vision & Psychophysics Lab, Rutgers University 2013 - 2018

PI: Melchi M. Michel,

Project: Position Uncertainty & Visual Search

Social Lab, Bogazici University 2012 - 2013

PI: Adil Saribay,

Project: Face Perception and Interpersonal Inference

Psychobiology Lab, Bogazici University 2012 - 2013

PI: Resit Canbeyli,

Projects: Time and Length Perception Using Psychophysics & Hemispheric Asymmetry of Olfactory Perception and Mood Changes

Autobiographical Memory Lab, Bogazici University 2011 - 2012

PI: Ali Tekcan,

Project: Accessing Early Childhood Memories

Undergraduate Research Experience

Language and Communication Lab, Koc University 2009 - 2010

PI: Aylin Kuntay,

Project: Children's Language Processes and Differential Looking Paradigm

Visual Cognition and Psycholinguistics Lab, University of Edinburgh

PI: Fernanda Ferreira,

Project: Referential Expressions and Comprehension

July-Sept, 2009

Cognitive Processes Lab , Bogazici University PI: Aysecan Boduroglu & Sonia Amadio, Project: Change Detection Abilities of Drivers	Sept-Dec, 2009
Basic and Applied Cognition Laboratory , University of Michigan PI: Priti Shah, Project: Individual Differences in Visuo-Spatial Processing	Sept-Dec, 2008

TEACHING EXPERIENCE

Classes Taught

Quantitative Methods in Psychology (Statistics I & II)	Summer 2018
Cognition Lab	Fall 2016 - Fall 2017
Sensation & Perception Lab	Fall 2014 - Spring 2016 & Spring/Fall 2018
Lab for Introduction to Statistics for Psychology I & II	Fall/Spring 2012

Guest Lectures

Advanced Statistical Methods (<i>topic: Probability distributions in R</i>)	Spring 2018
Cognition (<i>topic: Perception</i>)	Summer 2016
Advanced Statistical Methods (<i>topic: Sampling dist. & hypo. test.</i>)	Fall 2016
Cognition (<i>topic: Attention</i>)	Fall 2015

Teaching Assistant Positions

Advanced Statistical Methods for Psychology	Spring 2016
Social Psychology. Abnormal Psychology	Spring 2014
Cognition. Motivation and Emotion	Fall 2013
Experimental Psychology	Spring/Fall 2012
Introduction to Psychology	Fall 2011
Social Influences on Behavior	Spring 2011

SELECTED COURSEWORK

Psychology / Cognitive Science / Vision Science: Perception, Computational Cognition, Computational Thinking, Mathematical Models of Learning & Cognition (Psychophysics, Perceptual Inference, & Ideal Observers), Bayesian Inference in Perception & Cognition, Mathematical Models of Learning & Cognition (Model Testing & Probabilistic Inference), Methods in Perceptual Science

Statistics: Probability Theory, Methods of Statistical Inference, Regression Analysis, Design of Experiments, Interpretation of Data (e.g., Logistic Regression, Principle Component Analysis), Applied Time Series Analysis, Methods of Nonparametric Statistics

SERVICE & MEMBERSHIP

Ad Hoc Reviewer – <i>Journal of Vision</i>	
Object Perception, Attention, and Memory (OPAM) Conference – Co-organizer	2018, 2019
Rutgers Cognitive Science Graduate Student Organization – President	2016 - 2017
Rutgers Cognitive Science Graduate Student Organization – VP	2015 - 2016
Rutgers Graduate Student Mentorship Program – Mentor	Summer 2015
Vision Science Society – Member	Since 2013
Psychonomic Society – Member	Since 2012
European Federation of Psychology Students Association (EFPSA) – Member	2012