

WAI KEEN VONG

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EMPLOYMENT

March 2019 - present New York University, Center for Data Science
Postdoctoral Researcher - Human and Machine Learning Lab
Supervisor: Dr. Brenden Lake

Dec 2016 - March 2019 Rutgers University – Newark
Postdoctoral Researcher - Cognitive and Data Science Lab
Supervisor: Dr. Patrick Shafto

EDUCATION

2013 - 2018 University of Adelaide
Ph.D. in Psychology
Thesis title: From simple to complex categories: How structure and label information guides the acquisition of category knowledge
Supervisors: Dr. Danielle Navarro, Dr. Amy Perfors and Dr. Andrew T. Hendrickson

2008 - 2012 University of Adelaide
Bachelor of Psychology (First Class Honours)
GPA: 6.5/7.0
Supervisors: Dr. Danielle Navarro and Dr. Amy Perfors

2009 - 2011 University of Adelaide
Bachelor of Mathematical and Computer Sciences
GPA: 6.4/7.0
Majors: Pure Mathematics and Computer Science

OTHER EDUCATION

July 2016 *Summer School in Probabilistic Programming and Machine Learning, Portland, USA*

February 2016 *Bayesian Estimation of Evidence Accumulation Models Workshop, Tasmania, Australia*

August 2013 *Bayesian Modeling for Cognitive Science Workshop, University of Amsterdam, Netherlands*

HONOURS AND AWARDS

- 2016 *Marr Prize*, Cognitive Science Society
Awarded to the best student paper at the Cognitive Science conference
- 2016 *Robert J. Glushko and Pamela Samuelson Foundation Student Travel Grant*, Cognitive Science Society
Awarded for one of the top 20 student papers submitted to the Cognitive Science conference
- 2014/2016 *Higher Degree Research Assistance Scheme*, School of Psychology, University of Adelaide
Awarded funding to present research at an international conference
- 2013 - 2016 *Australian Postgraduate Award*, University of Adelaide
Scholarship funding for three years to conduct postgraduate research
- 2010 *Dean's Certificate of Merit*, University of Adelaide
Awarded for academic excellence
- 2009/2010 *Summer Research Scholarship*, University of Adelaide
Awarded over two summers to conduct research in the *Computational Cognitive Science Lab*

INVITED TALKS

- December 2017 *Seminar on Concepts and Categories (ConCats)*, New York University.
- August 2016 *Computation and Language Lab*, University of Rochester.
- August 2016 *Computational Cognitive Neuroscience Lab*, Harvard University.
- August 2016 *Seminar on Concepts and Categories (ConCats)*, New York University.
- August 2016 *Cognitive and Data Science Lab*, Rutgers University - Newark.

TEACHING EXPERIENCE

- 2016 Tutor - Doing Research in Psychology (second year psychology course in introductory statistics). Responsibilities included running fortnightly tutorials teaching R and statistics to psychology undergraduates and marking problem sets.
School of Psychology, University of Adelaide
- 2014 Tutor - Computational Cognitive Science (third year course in computer science). Responsibilities included planning and running weekly tutorials teaching computational modeling in cognitive science, and marking problem sets.
School of Computer Science, University of Adelaide

RESEARCH EXPERIENCE

- 2013 - 2014 Research Assistant - Worked with John Dunn to develop software in R for performing state trace analysis
School of Psychology, University of Adelaide
- 2011 - 2012 Research Assistant - Developed software in C++ to help annotate and label images.
The Australian Centre for Visual Technologies, University of Adelaide
- 2009 - 2012 Research Assistant - Helped schedule and run experiments on multiple projects studying language learning and category learning
Computational Cognitive Science Lab, University of Adelaide

PUBLICATIONS

1. **Vong, W. K.**, Hendrickson, A. T., Perfors, A. F. & Navarro, D. J. (2019). Do additional features help or harm during category learning? The curse of dimensionality in human learners. *Cognitive Science*.
2. Yang, S.C-H.*, **Vong, W.K.***, Yu, Y., & Shafto, P. (2019). A unifying computational framework for teaching and active learning. *Topics in Cognitive Science*. (* indicates equal contribution)
3. **Vong, W. K.***, Sojitra, R. *, Reyes, A., Yang, S. C-H & Shafto, P. (2018). Bayesian teaching of image categories. *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. (* indicates equal contribution)
4. Yang, S.C-H., Yu, Y., Givchi, A., Wang, P., **Vong, W.K.**, & Shafto, P. (2018). Optimal Cooperative Inference. *Proceedings of the 21st International Conference on Artificial Intelligence and Statistics (AISTATS)*.
5. **Vong, W. K.**, Hendrickson, A. T., Perfors, A. F. & Navarro, D. J. (2016). Do additional features help or harm during category learning? An exploration of the curse of dimensionality in human learners. In A Papafragou, D Grodner, D Mirman and JC Trueswell (Ed.) *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (pp. 2471-2476) **Marr Prize for Best Student Paper**.
6. **Vong, W. K.**, Navarro, D. J. & Perfors, A. F. (2016). The helpfulness of category labels in semi-supervised learning depends on category structure, *Psychonomic Bulletin & Review*, 23, 230-238.
7. **Vong, W. K.**, Perfors, A. F. & Navarro, D. J. (2014). The relevance of labels in semi-supervised learning depends on category structure. In P Bellow, M Guarani, M McShane and B Scassellati (Ed.) *Proceedings of the 36th Annual*

Conference of the Cognitive Science Society (pp. 1718-1723)

8. Navarro, D. J., Perfors, A. F. & **Vong, W. K.** (2013). Learning time-varying categories. *Memory & Cognition*, 41, 917-927.
9. **Vong, W. K.**, Hendrickson, A. T., Perfors, A. F. & Navarro, D. J. (2013). The role of sampling assumptions in generalization with multiple categories. In M Knauff, M Pauen, N Sebanz and I Wachsmuth (Ed.) *Proceedings of the 35th Annual Conference of the Cognitive Science Society* (pp. 3699-3704)

CONFERENCE PRESENTATIONS

1. Vong, W. K. *, Sojitra, R. *, Reyes, A., Yang, S. C-H & Shafto, P. (2018). Bayesian teaching of image categories.
· Presented as a poster at the *40th Annual Conference of the Cognitive Science Society* in Madison, USA.
2. Sojitra, R., Vong, W.K. & Shafto, P. (2017). The dynamics of visual experiences.
· Presented as a poster at the *Cognitive Computational Neuroscience Conference* in New York City, USA.
3. Vong, W. K., Hendrickson, A. T., Perfors, A. F. & Navarro, D. J. (2016). Do additional features help or harm during category learning? An exploration of the curse of dimensionality in human learners.
· Presented as a talk at the *38th Annual Conference of the Cognitive Science Society* in Philadelphia, USA.
4. Vong, W. K., Hendrickson, A. T., Perfors, A. F. & Navarro, D. J. (2016). Learning conceptual structure: How category labels affect learning and generalization in hierarchical and cross-cutting categories
· Presented as a talk at the *Experimental Psychology Conference* in Melbourne, Australia.
5. Vong, W. K., Hendrickson, A. T., Perfors, A. F. & Navarro, D. J. (2016). Overcoming the curse of dimensionality: How category structure affects the learning of complex categories.
· Presented as a talk at the *Australian Mathematical Psychology Conference* in Hobart, Australia.
6. Vong, W. K., Hendrickson, A. T., Perfors, A. F. & Navarro, D. J. (2015). When more doesn't help: Learning categories with many features.
· Presented as a talk at the *Experimental Psychology Conference* in Sydney, Australia.
7. Vong, W. K., Perfors, A. F. & Navarro, D. J. (2014). The relevance of labels in semi-supervised learning depends on category structure.
· Presented as a talk at the *36th Annual Conference of the Cognitive Science Society* in Quebec City, Canada.

- Presented as a talk at the *Experimental Psychology Conference* in Brisbane, Australia.
 - Presented as a talk at the *Australian Mathematical Psychology Conference* in Canberra, Australia.
8. Vong, W. K., Hendrickson, A. T., Perfors, A. F. & Navarro, D. J. (2013). The role of sampling assumptions in generalization with multiple categories.
- Presented as a poster at the *35th Annual Conference of the Cognitive Science Society* in Berlin, Germany.
 - Presented as a talk at the *Experimental Psychology Conference* in Adelaide, Australia.
 - Presented as a talk at the *Australian Mathematical Psychology Conference* in Sydney, Australia.

SKILLS

Programming R, Python, WebPPL, Javascript, HTML/CSS
Software L^AT_EX, Emacs, git, Bash

PROFESSIONAL ASSOCIATIONS

Member of the Cognitive Science Society
Ad-hoc reviewer for: Cognitive Science Conference, Psychological Research, American Journal of Psychology