

Daniel Saunders

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SKILLS

- **Expert in languages:** Python (NumPy, SciPy, matplotlib, pandas), MATLAB, SQL. Training and experience in C/C++, Perl, Java, JavaScript, PHP, LaTeX, Visual Basic.
- **Statistical software:** SPSS, Stata, R.
- **Software engineering methodology** including Git, Subversion, unit testing.
- **Experimental design, hypothesis testing, data exploration.**
- **Human cognitive models and vision science.**

EXPERIENCE

Cognition Researcher

May 2014 – Present

CIMeC, University of Trento

Rovereto, Italy

- Processed 300 hours of eyetracking data, and integrated with fMRI data. Created a new metric for divergence in gaze based on k -means clustering and mixture of Gaussians.
- Designed and analyzed behavioural and eyetracking experiments, including creating an innovative dual simultaneous eyetracker apparatus.
- Supervised two junior colleagues throughout yearlong projects.

Research Consultant

July 2015 – Oct 2015

Rambus Labs

Sunnyvale, CA (remote)

- Built a behavioural model for a new product prototype, which proved its feasibility to move to the next stage of development.

Vision and Rehabilitation Researcher

May 2011 – Apr 2014

Schepens Eye Research Institute

Boston, MA

- Built a Web-database architecture to present videos to Amazon Mechanical Turk workers and collect 6400 natural-language responses.
- Developed text scoring algorithm that performed 16% better than established algorithms on our dataset. Successfully patented, US20150216414.
- Presented at conferences such as Vision Sciences Society and the European Conference on Eye Movements.

EDUCATION

Online coursework (with certificates)

- Machine Learning by Stanford University on Coursera.
- Introduction to Big Data by UC San Diego on Coursera.

PhD (2011), Psychology

Queen's University, Kingston, Ontario

- Applied principal component analysis and Fourier analysis to 5 GB of human gait data.
- Developed and validated an online battery of behavioural tests.
- Taught advanced statistics tutorials for undergraduates.
- Supervised student projects through to publications.

Master's (2006), Psychology

Queen's University, Kingston, Ontario

- Used optic-flow algorithms to reduce time to code pigeon behaviour videos from 900 hours (hand-coding) to 20.

Bachelor of Math, Honours Computer Science – Cognitive Science Option (2004)

University of Waterloo, Waterloo, Ontario

- Two co-op work terms in software engineering at Amazon.com. Learned about the order processing engine for optimizing shipping margins, and built and tested a new feature.
- Co-op work terms at Toronto Hydro, Bell Canada, and Shell Canada.

SELECTED PUBLICATIONS

- Ware, E., **Saunders, D. R.**, & Troje, N. F. (2015). The influence of motion quality on responses towards video playback stimuli. *Biology Open*, 4(7), 803-811.
- **Saunders, D. R.**, Bex, P.J., & Woods, R. L. (2013). Crowdsourcing a normative natural language dataset: A comparison of Mechanical Turk and in-lab data collection. *Journal of Medical Internet Research*, 15(5), e100.

ADDITIONAL ACHIEVEMENTS

- Published 10 peer-reviewed journal articles, 5 first-author.
- Co-hosted and produced the podcast *Fight the Future*, which was downloaded over 100,000 times and nominated for a Hugo Award.
- Co-wrote book chapter in *Doctor Who Psychology: A Madman with a Box*, to be released October 2016 by Sterling Publishing.