Josh Seltzer

Software Architect · Primatology Researcher

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Education

University of Toronto — *Toronto, Canada*

BSc in Computer Science & Cognitive Science (3.5 cGPA) — *Sep. 2013 - Jul. 2017*

- Honours Thesis: *Automating camera trap research with deep learning.* Supervised by Michael Guerzhoy and Monika Havelka
- Graduate Coursework: Computational Neuroscience
- Field Coursework: Ecology and Conservation in Ecuador

Publications

"Deep learning for the automatic detection of owl monkey (*Aotus azarae*) vocalizations" — *2020*

28th Congress Joint Meeting of the International Primatological Society and the Latin American Society of Primatologists — Submitted for poster presentation

Seltzer, J., García de la Chica, A., Clink, D. J., & Fernandez-Duque, E.

"Computer vision methodologies for processing camera trap data: a technological review" — *2018*

High Spatial Resolution Remote Sensing: Data, Techniques, and Applications — Published

Seltzer, J., Guerzhoy, M., & Havelka, M.

"Light on a darkling plain: mystical experience is predictive of meaning-in-life" — *2018*

The Journal of Positive Psychology — Submitted for publication

J. Vervaeke et al.

Professional Experience

Nexxt Intelligence [nexxt.in] — *Toronto, Canada*

Technical Lead — *Apr. 2018 - Present*

- Directed by Kathy Cheng, Founder & CEO
- Leading R&D on a suite of scalable web applications centered around an NLP-powered chatbot, including a management portal, real-time data analytics dashboard, and interactive clustering app
- Researching and adapting state-of-the-art / deep learning NLP models to build a conversational agent
- Coordinating and directing other technical team members (15 people, including system admins, software developers, data analysts and machine learning engineers)
- Applying to grants and incubators; organizing team meetings; planning long-term initiatives; etc.

Toronto French School [tfs.ca] — *Toronto, Canada*

Technical Consultant & Software Engineer — *Sep. 2014 - Sep. 2019*

- Directed by Bob Tarle, Executive Director of Innovation & Technology
- Designing, implementing, and deploying a secure, large-scale intranet suite across four campuses
- Researching cost-effective solutions to unique technological problems
- Creating interactive web apps for students, teachers, parents, and administrators
- Maintaining and supporting full-stack and embedded system services
- Providing extensive documentation to ensure robust and long-lasting applications

Academic & Volunteer Experience

Owl Monkey Project [owlmonkeyproject.wordpress.com] — *Formosa, Argentina*

Research Assistant — *Nov. 2019 - Jun. 2020*

- Directed by Eduardo Fernandez-Duque, Yale University
- Demographic, behavioural, and biological data collection of *Aotus azarae* including animal captures
- Working with sensor technology including radio telemetry, camera traps, and passive acoustic monitoring
- Analysis of bioacoustic data with experimental machine learning algorithms, and development of an open source library for analysis of passive acoustic data (**pyPAM)**
- Development of an unsupervised machine learning pipeline for learning to detect animal vocalizations and sounds by integrating passive acoustic monitoring with camera traps (**camPAM**)
- Grant and research proposal writing (e.g. Azure Compute Credit Grant)

EMNLP-IJCNLP 2019 [emnlp-ijcnlp2019.org] *Hong Kong*

Secondary Reviewer *Jun. 2019*

- Assisted Pablo Duboue in the peer review of natural language processing papers

Organización para los Nativos y la Conservación de la Amazonia [oncaorg.org] *Beni Department, Bolivia*

Volunteer *Jan. 2018 - Mar. 2018*

- Directed by Andrés Jiménez Gómez
- Rehabilitating and administering medicine to semi-captive animals (*Cebus apella*, *Ateles chemek*, *Saimiri boliviensis*, *Aotus azarae*, and *Nasua nasua*)
- Helping coordinate a rotating roster of volunteers
- Constructing and fixing infrastructure for the park
- Maintaining and cleaning animal and human premises

Consciousness & Wisdom Studies Lab [cwsl.ca] *University of Toronto*

Research Assistant *Jan. 2017 - Oct. 2018*

- Directed by John Vervaeke and Anderson Todd, University of Toronto
- Designing, implementing, and deploying online experiment pipelines
- Enforcing rigorous, secure, and confidential data management practices
- Spearheading an original project (*Cognitive mechanisms of growth mindsets*)
- Led experimental design, logistic organization, grant applications, etc.

Mack Lab [macklab.utoronto.ca] *University of Toronto*

Research Assistant *Mar. 2017 - Mar. 2018*

- Directed by Michael Mack, University of Toronto
- Helped conduct fMRI imaging sessions (certified as Level I fMRI Personnel)
- Assisted with computational models of memory, attention, and other topics in cognitive neuroscience

Honors & Awards

AI for Earth Microsoft Azure Compute Grant, AI to Study and Monitor Mammals in the Argentine Chaco *Owl Monkey Project* Jan. 2020

High Distinction, Honours Bachelor of Science *University of Toronto* Jul. 2017

Dean's List Scholar, Exceptional Academic Achievement *University of Toronto* Jul. 2017

Best in Show, ASA DataFest *University of Toronto* Mar. 2017

Awardee, Rose M. Patten Summer Abroad Scholarship *University of Toronto* Nov. 2016

Technical Skills

Machine Learning	TensorFlow, CNNs, NLP, MLaaS
Data Science	R, Python, Spark, Matplotlib, MATLAB
Front-end	React, HTML5, SASS, Typescript
Backend	Express, Node.js, Flask, PHP, REST API
DevOps	Azure, AWS, GCP, Jira, Bitbucket
SysAdmin	Apache, IIS, Nginx, *nix Systems
Natural Languages	English, Spanish