# Joshua Loong

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**REFERENCES**
Available upon
request

## EXPERIENCE

### Data Analyst, Strategic Insights Unit, Destination Ontario
Toronto, ON – June, 2018 - September, 2018
- Lead an organization-wide strategic review in data and reporting practices to centralize data storage, provide better goal-oriented analysis, and build analytic capacity through training

### Data Scientist, Digital Team, Ontario Liberal Party
Toronto, ON – January, 2018 - June, 2018
- Construct models to find in-depth insights into the performance of digital media content by extracting features, such as colour hues and objects, using computer vision
- Implement research learnings into production through an internal Flask web app that would assist digital marketing staff with fine-tuning content for better performance
- Create a data monitoring pipeline to analyze political Twitter conversations for bot activity
- Develop dynamic heat maps of granular voter prediction data to help campaign managers allocate volunteer resources more efficiently

### Research Analyst Intern, Ministry of Advanced Education and Skills Development
Toronto, ON – May, 2017 – August, 2017
- Complete and present statistical analysis using Python, Excel and Tableau to quantify the effects of potential policy changes to job training programs and their effects on student outcomes
- Design data visualization web apps to make open data initiatives more accessible to everyday citizens, in addition to internal research use, using Node.js, MySQL, and Plotly

### Marketing Data Analyst, Cabinet Office, Government of Ontario
Toronto, ON – September, 2016 – December, 2016
- Conduct numerous research projects using government social media data to create tools and best practices for the Cabinet Office team using Excel and VBA
- Most significantly create a model to optimize ad frequency suited for public policy announcements

## RESEARCH

### Temporal processing of facial expressions of mental states (submitted)
Maiya Jordan, Gunnar Schmidtmann, Joshua Loong, Andrew Logan, Claus-Christian Carbon, Ian Gold
- This study seeks to gain insight into Dual Process theory through the ability for study participants to recognize complex emotions through facial expressions
- Conduct exploratory analysis, and statistical modeling and testing using the Python scientific computing stack (pandas, numpy, matplotlib, statsmodels, sklearn)

### Improving random feedback alignment with transfer learning (in progress)
Joshua Loong, Andrej Kukuruzovic, Gabi Kim, Eric Hunsberger
- This project looks to improve how random feedback alignment, a biologically plausible alternative to backpropagation in neural networks, performs in more complex domains by initializing the feedback matrix with information transferred a more simple domain
- Write code using Tensorflow to implement feedback alignment and weight transferring

## PROJECTS
- **Topic Modeling Song Lyrics -** Used an unsupervised text classification method (Latent Dirichlet allocation) to find content differences between music genres
- **Chow Test Module -** Built the first Python package for calculating Chow tests to measure structural breaks in time series data
- **Git Status Size -** Developed a bash utility to better manage file sizes in git workflows

## EDUCATION

### Candidate for Honours Bachelors of Science, in Science and Business
University of Waterloo, Waterloo, ON — Sept, 2014 – December, 2019
- The degree provides a strong background in scientific research and analytic skills overlaid with a business focused mindset. Elective classes in the computational sciences also provide rigorous knowledge in topics such as deep learning and advanced statistical methods.
- Relevant activities: VP of Technology for the UW Data Science Club
- Relevant courses: Statistics for Economists, Computational Biology, Biostatistics & Experimental Design, Computational Neuroscience, Statistical Problem Solving, Business Finance

## TECHNICAL SKILLS
- Languages such as Python, Javascript, VBA, Bash, SAS, SQL
- Libraries such as sklearn, Tensorflow, scipy, statsmodels, pandas, numpy, matplotlib, flask, node.js and react.js
- Software such as Excel, SPSS, Tableau, Power BI, Mapbox, CARTO

## SOFT SKILLS
- Effective verbal and written communication ability especially when it comes to highly technical topics
- Team player with strong interpersonal skills
- Fast learner and passionate about solving hard problems