

Andres Potapczynski

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EDUCATION

Columbia University
M.S. in Data Science

Sep 2017 - May 2019

Instituto Tecnológico Autónomo de México (ITAM)
B.S. in Applied Mathematics (graduated with highest honors)
B.A. in Economics (graduated with highest honors)

Aug 2009 - May 2015

RESEARCH EXPERIENCE

Mortimer B. Zuckerman Mind Brain Behavior Institute
Advisor: John P. Cunningham

Aug 2019 -

- **Invertible Gaussian Reparameterization: Revisiting the Gumbel-Softmax**

- *Introduced a better performing and more extensible family of continuous relaxations than the Gumbel-Softmax for training discrete models. Accepted at NeurIPS 2020.*

- **Conjugate Priors for the Continuous Bernoulli and Continuous Categorical**

- *Studied and characterized the conjugate priors for the recently introduced Continuous Bernoulli and Continuous Categorical distributions. This is expected to be part of an article sent to JMLR.*

- **Gaussian Processes training via Russian Roulette Estimators**

- *Exploring how to eliminate the hyperparameter bias introduced by training with conjugate gradient or randomized Fourier features by using Russian Roulette estimators.*

OTHER PROJECTS

Nowcasting with Google Trends (Undergraduate Thesis)

- Proposed a bandwidth selection algorithm for kernel regression to analyze Google searches data.

Helping Neoway Classify Food and Beverages Clients (Capstone)

Jan 2019 - May 2019

- Constructed a Machine Learning model to classify clients based on their webpage's menus and a vector representation of the diverse cuisines. This representation was inspired in *Word2Vec*.

WORK EXPERIENCE

McKinsey & Company

Sep 2015 - June 2017

- Constructed different analytical models for the diverse client's challenges. Some examples are: a game theory model that predicted the response of the competition given a change of offer. Or, the promotional effectiveness time-series models and its visualizations.
- Engaged in 6 different projects in the Telecom and CPG industries with diverse teams from Colombia, England, India, Peru, Spain, US and Venezuela. Gained an in-depth knowledge about the types of data that those industries gather as well as the relevant problems that they face.

PROGRAMMING

- Python (TensorFlow, PyTorch, NumPy), C++, Matlab, R.

TEACHING EXPERIENCE

- TA for Machine Learning @ Columbia University (CS) *Jan 2019 - May 2019*
- TA for Intro to Real Math Analysis @ ITAM (Math) *Jan 2014 - May 2014*
- TA for Advanced Macroeconomics @ ITAM (Econ) *June 2011 - May 2013*

ACADEMIC AWARDS

- Generation Representative (similar to Valedictorian), criteria includes: GPA rank, thesis and outreach.
- Honorific mention in Applied Mathematics thesis (ITAM)
- Honorific mention in Economics thesis (ITAM)

FELLOWSHIPS

- FIDERH, Banco de Mexico.

PUBLICATIONS

- A Potapczynski, G Loaiza-Ganem, JP Cunningham. “Invertible Gaussian Reparameterization: Revisiting the Gumbel-Softmax” *Advances in Neural Information Processing Systems (NeurIPS)*, 2020.