

# GABRIEL LEE

## PROFESSIONAL EXPERIENCE

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### **NextRoll, Inc.**

*Data Scientist II, RollWorks and AdRoll Product Analytics*

Feb 2022 – Jul 2023

*Toronto, CA/San Francisco, US*

- Decreased adverse spending of customer ABM/B2B ad campaigns from 2% to sub-1% (~\$500k annually) by identifying within the reporting where issues were occurring in the pipeline. Worked with product and engineering teams to rectify adverse spending for the largest customers.
- Validated in-house NLP models that were productized into a keyword intent feature rolled out to ABM customers, enabling them to increase and more efficiently target their prospective audience sizes and proactively prevent churn.
- Identified an additional \$15–20MM of unspent D2C customer budgets by improving reporting of campaign performance at each stage of the funnel. Worked with multiple teams to understand and reduce these frictions: e.g., in campaign setup, segmentation, and real-time bidding. Built out ETL and visualizations in Tableau and Redash for different stakeholders. Coordinated with customer success teams to utilize these data to prioritize actions of account managers.
- As part of the company’s transformation of the D2C offering into a “one-stop shop” marketing platform, overhauled reporting and integrating customers’ ingested data from multiple platforms. Worked with product and engineering on the ads, contacts, and multi-channel attribution teams to align on required data, pipelines for ETL, and visualizations.

### **FlipGive, Inc.**

*Data Contractor*

Jun 2021 – Oct 2021

*Toronto, CA*

- Presented company’s KPI forecasts to senior leadership that were used in a successful Series B funding round in 2023. These were projected for different customer acquisition strategies and synergies of upcoming product releases.
- Drove a more than 50% decrease in CAC by focussing a new customer acquisition team’s targeting on specific geographic and sports markets. Reviewed all available market research to perform a granular breakdown of TAM and developed a Tableau tool to visualize this for the team.

### **Korea University/Cornell University**

*Research Professor, Institute of Basic Science/Postdoctoral Fellow, CLASSE*

Sep 2017 – May 2021

*Seoul, KR/Ithaca, US*

- Proposed new models of dark matter that are motivated by nuclear physics and examined their cosmological constraints.
- Exhibited a new class of models that unify fundamental forces and investigated their experimental signatures at and constraints from the Large Hadron Collider.
- Applied previous work on electron–proton scattering data to improve inputs into experiments in the multi-year billion-dollar US neutrino physics programme and novel table-top searches using atomic physics.

### **Technion – Israel Institute of Technology**

*Postdoctoral Fellow, Faculty of Physics*

Sep 2014 – Aug 2017

*Haifa, IL*

- Proposed experimental approaches to discovering new physics at the Large Hadron Collider that explain the mass hierarchies of known elementary particles.
- Interfaced with experimental colleagues to understand details of the statistical and systematic uncertainties of their analyses and to suggest improvements to maximize sensitivity to new physics.
- Worked with a number of students in a supervisory role.

## EDUCATION

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### **University of Chicago**

*M.S. (2008) and Ph.D. (2014), Physics*

Sep 2007 – Aug 2014

- Thesis title: Applications of Effective Field Theory to the Higgs Mass Problem and the Proton Radius Puzzle.
- Awards: NSERC Postgraduate Scholarship D3 (2009–2012); Sachs Fellowship, Department of Physics (2008).

- Awards: St. Michael's College Silver Medal in Mathematics (2007); University of Toronto Scholar (2005 and 2006).

## TECHNICAL CAPABILITIES

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### Programming languages and environments

- Programming languages: Python (including Numpy, Scipy, pandas), Java, SQL (Presto/Trino)
- Machine learning: TensorFlow
- Scientific computing: Mathematica, MATLAB
- Visualization: gnuplot, matplotlib, Tableau

### Code and package development

- MhEFT, Mathematica package that calculates constraints on supersymmetric models of new physics from experimental measurements of Higgs boson properties.
- Python code for chi-square tests of models of the proton and neutron to world elastic electron–nucleon scattering data.

### Languages

- English (fluent), French (functional), Cantonese (basic conversational).

## PROFESSIONAL ACTIVITIES

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### Academic Publications

- 15 refereed publications (totalling more than 775 citations), 10 publications with large collaborations, and 10 review and conference publications.
- Full publication records are available at arXiv or Google Scholar.

### Academic Service

- Referee, European Physical Journal C, 2016–2020, and Journal of High Energy Physics, 2018–2021.
- Co-organizer, 4th New Physics in Korea Institute workshop: Searching for New Physics on the Horizon, May 2019.
- Co-organizer, Israel Joint Seminar in Particle Physics, 2015–2016.

### Selected Talks

- 2019–2020: U. Kentucky, Institute for High Energy Physics (Beijing).
- 2018: Carleton U.; U. of Toronto; Cornell U.; Korea Institute for Advanced Study; Korea Advanced Institute of Science and Technology; Seoul National U.; Galileo Galilei Institute; TRIUMF; U. Oregon.
- 2017: Weizmann Institute; U. of Sussex; U. of Manchester; King's College London; Oxford; New York U.
- 2016: Johannes Gutenberg-Universität Mainz; Hebrew U. of Jerusalem; U. of Wisconsin, Madison; Argonne National Laboratory; U. of Cincinnati; U. of Pittsburgh.
- 2015: Technion; UC Santa Cruz; Perimeter Institute; York U.