.Layer

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Prof. Mary Thompson
Chair of the Fundraising Committee
Statistical Society of Canada

Subject: education and outreach proposal

Dear Prof. Thompson,

I am writing to you on behalf of *.Layer* (pronounced "dot layer"), a community created for promoting collaboration and knowledge sharing in the field of data science. As an organization in its creation process, we were very pleased to learn about the recent call for education and outreach proposals of the Statistical Society of Canada. I will try, in this letter, to clearly describe who we are, what our mission is, and how we intend to put our words into action. We hope that you will find our proposal convincing enough to grant us your support.

Who we are

Last Summer, some of us organized a week-end of presentations and activities related to data science. Friends of friends, fifteen in total, then met for an epic brainstorm. Out of it emerged *.Layer*, a Quebec City hub consisting of more or less 25 students and/or practitioners in the fields of statistics, actuarial science and computer science, (mostly) residing in either Montreal or Quebec City. We create, through various initiatives, both virtual and physical spaces where people can meet, learn and share. Members responsible for the present proposal are (* = SSC member):

Jean-Thomas Baillargeon, M.Sc. FSA, CERA
PhD student at Laval University (computer science)
Lecturer at Laval University
Former actuarial analyst at Industrial Alliance (6 years)
Former data product manager at Xpertsea Solution (2 years)

David Beauchemin, B.Sc.
Masters student at Laval University (computer science)

Christopher Blier-Wong*, M.Sc.
PhD student at Laval University (actuarial science)
Masters student at Laval University (computer science)

Antoine Buteau
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Stéphane Caron*, B.Sc.
Actuarial analyst at Intact Insurance
Masters student at Laval University (mathematics and statistics)

Marie-Pier Côté*, PhD, FSA
Assistant professor, École d'actuariat, Laval University
Teaching chair on big data analysis for actuariat science — Intact
Member of the *New Investigators Committee* of the *SSC*

Nicolas Garneau, B.Sc.
PhD Student at Laval University (Computer Science)
Lecturer at Laval University, Computer Science, Deep Learning
Deep Learning Trainer, Big Data Research Center

Samuel Perreault*, M.Sc.
PhD student at Laval University (mathematics and statistics)
Research & innovation analyst at The Cooperators Insurance

Three of us, Marie-Pier Côté, Christopher Blier-Wong and Samuel Perreault presented at the 2018 SSC meeting.

So far, we have been working mostly on the two following initiatives.

(a) *Meetup Machine Learning Québec*: This project was founded by Nicolas Garneau. As the name suggests, it is dedicated to the organization of meetups and conferences related to machine learning in Quebec City. Before *.Layer* even existed, *Meetup* had already organized three events in 2017-2018 (at Laval University/XpertSea's offices/Coveo's offices), attracting more than 100 people in total. Since then, Nicolas joined forces with many others to organize events of even greater scope. Concretely, we organized both a conference (Laval University) and a hackathon (Bloc Solutions' offices) on statistics and machine learning applied to casualty insurance; as well as a workshop on natural language processing (Laval University). These events attracted an approximate total of 200 people. They were paid for (rooms, food, beverages, web services for GPUs, etc.) by our sponsors: Intact Insurance, Co-operators Insurance, Bloc Solutions and, from Laval University, the Big Data Research Center (CRDM), the Chaire d'actuariat and the service de placements (SPLA).

(b) *.Layer blog*: During the founding week-end of *.Layer*, we agreed that a blog would be great as a first project to collaborate on, as well as a convenient way of reporting our activities and sharing our ideas. Though great devotion: the blog is already up and running at dotlayer.org. In order to reach as many people as possible, we have recently made the website bilingual (en/fr).

The next big step for us is the registration of a nonprofit organization for administering the community's activities. Here is a sketch of the structure we intend to put in place.

Board of directors: The board consists of five people: an executive president, a secretary, a treasurer, a vice-president assigned to communication and a vice-president assigned to external affairs.

Members: In addition to contributing and participating to the organization's projects and events, members have the right to vote during the general assemblies. One must first be accepted by the current members in order to gain its member status.

Sympathizers: This group includes any other individual involved in the community's projects and events. They can share their opinion, but have no right to vote during assemblies.

This simple structure allows the organization to be as inclusive as possible while assuring that funds and efforts are spent on activities that are aligned with its mission. Any sympathizer minimally involved in the community, and demonstrating that he or she shares its inclusive values, should expect to be accepted as a member if requested.

Three distinct proposals

Since *.Layer* is not a project in itself, but a hub for projects, we have decided to split our proposal in three distinct parts. The first concerns the *.Layer* directly in that we seek help for covering the cost behind the organization of a healthy and inclusive community. The two others are related to web-based initiatives and physical events respectively. Details follow.

1. **Structuring the community**

   We are lucky to have among us a professional graphic designer, Jean-Christophe Yelle, who created our logo at no cost. However, we believe that professional services not directly related to data science (like logo design, t-shirt design, social media setup, and so on) should be fairly remunerated. In the budget provided with the letter, we also detail recent and future expenses related to the registration of *.Layer* as a nonprofit organization.

   Member in charge: Stéphane Caron

2. **Web-based material**

   We count on the *.Layer blog* to get a reach far beyond Quebec City and Montreal. We are committed to providing web material of great quality, and we think that it begins with a great use of the french and english languages. However, producing relevant material is a time-consuming enterprise and the translation of the articles we judge important can quickly become a burden. To make sure everyone spends his or her time on data science rather than translation, we would like get <u>revision services</u> from a professional translator (which are far less expensive than translation services). People willing to have their article in both languages would then only have to provide a draft of a translation. An overall revision of the website would be warmly welcomed too.

   Web-based material is not restricted to the blog. Some of us are currently working on a podcast named *OpenLayer*. In video clips of about 45-60 minutes, David Beauchemin would meet different actors of the data science community to discuss the journey that took them where they are today and what their day-to-day looks like. The objective is to shed light on the job market, a hidden layer for aspiring data scientists. David could for example meet a Ph.D. student in statistics or artificial intelligence or a data analyst at some insurance company. The concept is influenced by podcasts *à la* Joe Rogan and "Mike Ward sous écoute". In each episode, we will discover someone and his/her environment through a casual conversation.

   Members in charge: Antoine Buteau and David Beauchemin

3. **Educational event on statistical learning**.

   More *Meetup Machine Learning Québec* events are coming. An introduction to the foundations of machine learning, followed by a workshop on computer vision are offered on February 7 and 9 respectively. We are always seeking funds for organizing more events like these. In particular, we would like to organize one focusing on so-called statistical learning (we are big fans of the book *The Elements of Statistical Learning*). We think this would be a great opportunity for the *SSC* to get meaningful exposure. Your support, with that of other sponsors from the statistical community, would help us pay for rooms, food and beverages as well as keeping the price as low as possible for attendees. This would be a great opportunity for students to learn about the frontier between statistics and machine learning, in addition to being great opportunity for meeting professionals of various domains in which statistics is put to use.

   Member in charge: Nicolas Garneau and Christopher Blier-Wong

Administration of the funds

Administering the funds and reporting how they are used is the *raison d'être* of the nonprofit entity tied to .Layer. Until its official incorporation, the members responsible for the proposal will take the responsability of providing such report to the *Statistical Society of Canada*. We provided a budget and a timeline for each of the three proposals detailed in this letter.

We strongly believe that the goals of *.Layer* are aligned with the mission of the *SSC*. Through our workshops of varying levels and our educational blog posts, we help to broadcast the importance of sound statistical methods for data analysis. The blog acts as a platform for sharing ideas and reinforcing the sense of community between all individuals interested in data science and related fields. The meetup events and the workshops are also great opportunities to foster exchanges between theoreticians and practitioners.

On behalf of everyone involved in *.Layer*, I would like to thank you for considering our proposal. We wish to have convinced you that our projects are worthy of your support.

Sincerely,

Samuel Perreault