A Summary of the PL in ML: Polish View on Machine Learning 2018 Conference

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Abstract

Machine learning – a methodology for automatic analytical model building based on data – is rapidly growing discipline with constantly increasing popularity. In this summary, we discuss the issue of organising a machine learning conference and present a novel, state-of-the-art method to solve this issue – PL in ML: Polish View on Machine Learning conference. We take a look at statistics regarding a multitude of different aspects of creating such an event, present an overlook of the agenda and speakers, while also gathering data from the attendees to better understand their opinion.

[1]The ordering of the organisers is arbitrary and should not indicate the amount of individual contribution put into the project.

Figure 1: Around 350 people at the opening talk by Piotr Bojanowski at the main hall in the Faculty of Physics.

1 Introduction

The main idea behind the PL in ML: Polish View on Machine Learning Conference is to build a vibrant community of people who are passionate about machine learning. By inviting successful Polish researchers from all the around the world we want to inspire participants in the development of their own careers. Beyond that, we want to present Poland as an interesting place to conduct machine learning research.

The second edition of the PL in ML conference (PL in ML '18) was held at the Faculty of Mathematics, Informatics and Mechanics and Faculty of Physics of the University of Warsaw in Poland during the December weekend, from 14th to 16th. It gathered around 450 machine learning enthusiasts who could attend 37 different lectures and talks. The weather was quite good as for the middle of the December with steady 0°C and occasional drizzles.

2 Conference Program

The PL in ML conference began on Friday (14.12) at 16:30 in the auditorium in the Physics Department of the University of Warsaw (ul. Pasteura 5). The participants were welcomed by Agnieszka Sitko and Michał Zmysłowski – the main coordinators of the project. Afterwards, two keynote lectures were held: **Piotr Bojanowski** from Facebook AI Research in Paris talked about *Unsupervised Methods for Deep Learning and Applications* and **Mateusz Tarkowski** from BCG Gamma presented *Two Applications of Artificial Intelligence in Business: Black Box vs Extensive Modeling*.

On Saturday (15.12), the conference started at 10:00 in the building of the Faculty of Mathematics, Informatics and Mechanics of the University of Warsaw (ul. Pasteura 2). The participants could attend various lectures organised in three parallel tracks. Speakers, ranging from those involved in academia to those working on the business applications provided the listeners with a wide variety of topics to choose from.

In the evening, the poster session (Young Researchers Session) gave an opportunity for younger researchers to present their current work to other participants. Moreover, the discussions during the poster session have significantly contributed to building the machine learning community. The conference party organised afterwards in The Place (plac Europejski 1) provided further networking opportunities.

The conference continued in the building of the Faculty of Mathematics, Informatics and Mechanics on Sunday (16.12). From 11:00 the participants could once again attend talks and lectures divided between three parallel tracks. At 17:30, Jan Zyśko hosted the conference closing remarks, during which awards for the best posters were presented.

On Monday (17.12), additional day of practical workshops took place in the Golden Floor conference center (al. Jerozolimskie 123A).

The complete PL in ML conference agenda can be found here.

2.1 Speakers and Lectures

The participants of the second PL in ML conference had the opportunity to participate in 9 invited lectures, 9 industry talks and 19 contributed talks, making it 37 presentations in total.

Distinguished machine learning specialists from global leading research centers were invited to give main lectures during the event: **Piotr Bojanowski** from Facebook AI Research, **Mateusz Tarkowski** from BCG Gamma, **Karol Hausman** from Google Brain, **Grzegorz Świrszcz**, **Wojciech Czarnecki**, **Piotr Mirowski** and **Mateusz Malinowski** from DeepMind, **Marek Kowalski** from Microsoft and **Artur Dubrawski** from Carnegie Mellon University. We are deeply honoured that they decided to present their work during our conference. More information about the invited speakers can be found here.

Industry talks were held by leading data scientists and engineers from the companies that use machine learning in their businesses. They gave the participants an opportunity to learn how the theory can be used for practical applications based on real–world cases. Moreover, inviting business representatives created an opportunity for new connections between the industry and the academia.

Finally, 19 talks were given by the machine learning enthusiasts that submitted their talk proposals through PL in ML Call for Talks (39 proposals were received in total). These speakers ranged from Ph.D. candidates talking about their research, through authors of software libraries or packages presenting their work, to data scientists showing business cases of machine learning applications.

2.2 Discussion Panel

The discussion panel, held on Saturday evening at 17:00, featured six representatives of important Polish research funding bodies, universities, and companies.

The group of panelists was composed of **Maciej Chorowski** (Director of The National Centre for Research and Development), **Marek Michalewicz** (Director of the Interdisciplinary Centre for Mathematical and Computational Modelling of the University of Warsaw), **Mikołaj Bojańczyk** (Member of the Council of the National Science Centre and a Professor at the University of Warsaw), **Tomasz Trzciński** (Assistant Professor at the Warsaw University of Technology and a Chief Scientist in the Tooploox company), **Krzysztof Dembczyński** (Assistant Professor at the Poznań University of Technology), and **Łukasz Bolikowski** (Lead Data Scientist at the Boston Consulting Group).

The main goal of the panel was to create space for a discussion between people from different environments and with different opinions on the future of Artificial Intelligence in Poland.

Topics that were mentioned included:

- a comparison of the academic and industrial environments and their cooperation,
- personal experiences abroad of the panelists and their opinions on foreign research policies,
- a brain drain phenomenon in both academia and country context,
- availability of computational resources in research institutions,
- Polish education system – from the primary to the higher education – and how it prepares people for careers in machine learning.

It is also worth noting that the conversation was not restricted only to our panelists – the audience was full of focused, interested listeners who shared many opinions of their own during the discussion. The participants were also encouraged to approach the speakers after the panel, especially if they had any insights or ideas that they wanted to discuss further. The main drawback of the discussion panel

that was reported by the participants was the fact that it was conducted in Polish instead of English – changing the primary language of the panel will be taken into consideration during future events.

The whole discussion panel can be watched here.

2.3 Call for Posters and Young Researchers Session

During the registration for the conference, the applicants were encouraged to submit their proposals for the poster presentations. Those with accepted proposals obtained a free entrance for the event and an opportunity to present their work during the Young Researcher Session on Saturday (15.12) at 18:45. Furthermore, both the Scientific Board of the conference and the participants voted for the best posters.

The goal of the poster session was to promote the researchers who are at the beginning of their scientific careers and show that machine learning research is in fine fettle. Additionally, it aimed to connect young researchers with more experienced machine learning specialists who possibly could take them under their wings and guide them in the future.

Young Researcher Session turned out to be very successful. We received 75 applications from 10 different cities and accepted 49 of them to present their proposals. The posters attracted great number of viewers and stimulated so many discussions that the closing time of the session had to be slightly postponed. The Best Poster award, granted by the Scientific Board, was won by **Katarzyna Janocha** with her poster *Learning to be Interpretable*. The Audience award was given to poster *Auditor: Visual Validation of Predictive Models* by **Alicja Gosiewska** and **Agnieszka Ciepielewska**. The list of all presented posters can be found here.

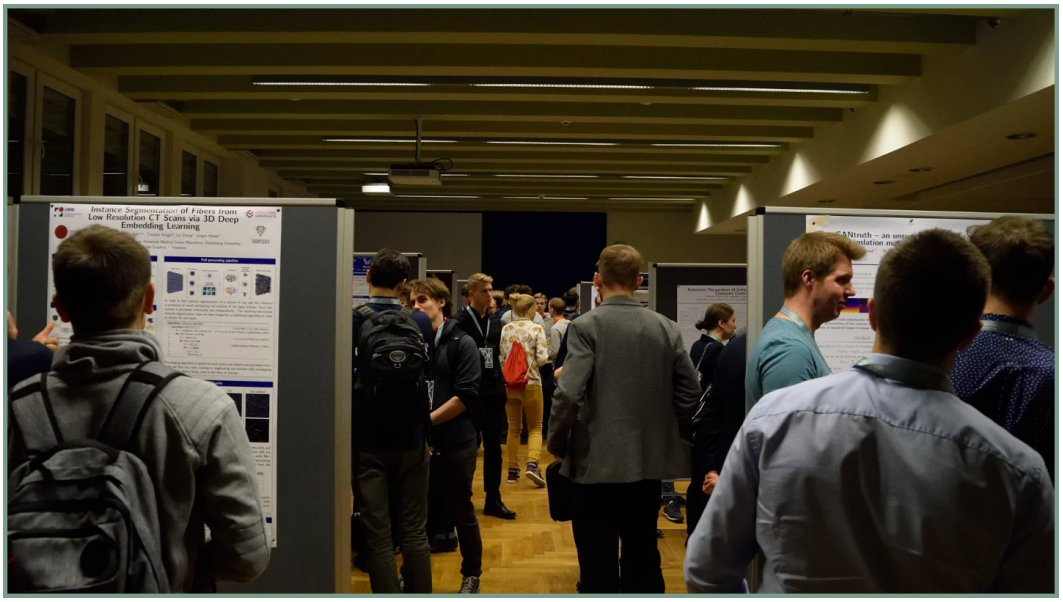

Figure 2: Young Researcher Session at the PL in ML 2018 conference.

2.4 Workshops

The Workshop Day was held on Monday (17.12), after the main part of the conference. The vision behind it was to offer participants an opportunity to dive right into their topic of choice, providing them with an insightful view of the industry. It featured six full–day technical workshops on a diverse set of topics, ranging from the basics of machine learning to cutting–edge applications and state–of–the–art research. The workshops were held by the specialists from the following companies and organisations: Tooploox, Sigmoidal, Intel & Deepsense.ai, NASK, PolyAI & University of Cambridge, Group of Machine Learning Research at the Jagiellonian University. Full list of workshops together with their agenda can be found here.

Overall, around 200 people attended the workshops, both from the industry and the academia. Based on the post-workshop survey, the vast majority of the participants were satisfied with the workshop they had attended. The most requested topic for a workshop next year was reinforcement learning. One thing that could be improved is collecting preparatory instructions from tutors earlier, because some attendees received them too late.

3 Participants

3.1 Registration

The registration for the PL in ML '17 conference was conducted in the first come, first served manner and the tickets were sold out in just few days. A lot of people were complaining that they did not get the chance to attend the conference, even though they were very active in the field.

In order to avoid last year's situation, where the registration was very hasty, this year the registration for the PL in ML conference was conducted in two separate batches: Early Bird Registration and Regular Registration. Early Bird Registration was open from October 6, 2018 to October 20, 2018. It required those interested in the participation to complete the application form. Then, based on the answers, the conference committee aimed to choose the applicants who would benefit the most from the event. The time of completing the application did not have an impact on the acceptance, as long as it was within the deadline. On the other hand, the Regular Registration, which opened after the results of Early Bird registration – November 26, 2018, was held in the standard first come, first served manner. During the Regular Registration the remaining tickets sold out in just 5 minutes.

3.2 Statistics

The 2018 edition of the PL in ML conference has attracted around **450** people from all over Poland, as well as from a couple of other European countries.

During the Early Bird Registration, the applicants were able to respond to an optional survey and **171** answers were submitted. Additional information was gathered from evaluation survey that the participants could fill during the conference itself.

The age of the applicants ranged from 19 to 53, with the majority being between 20 and 30 years old. Warsaw was the most popular city from which the potential attendees pointed as their main location with **48,0%** of the answers. **Kraków (11,7%)**, **Poznań (11,7%)**, **Tricity** (Gdańsk, Gdynia,

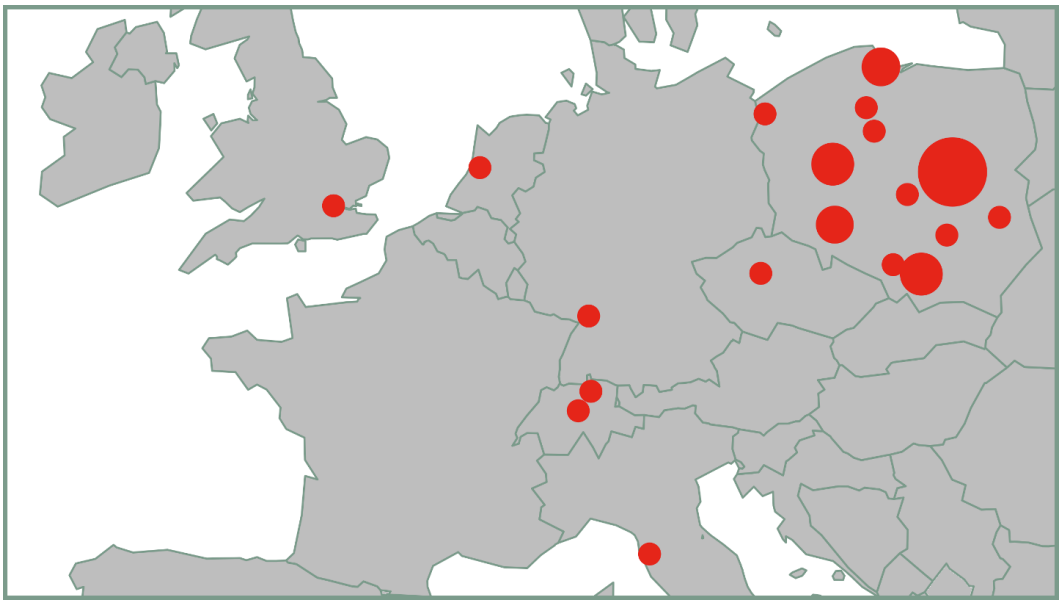

Figure 3: Location declared by the applicants. Source: registration survey.

and Sopot, as well as minor towns in their vicinity – **8,2%**), and **Wrocław (7,6%)** were reported next.

Only **12,9%** of were from a city different than those mentioned above, while **4,1% of people were from abroad**.

Presented below are statistics regarding machine learning professional experience, as well as the pursued education level.

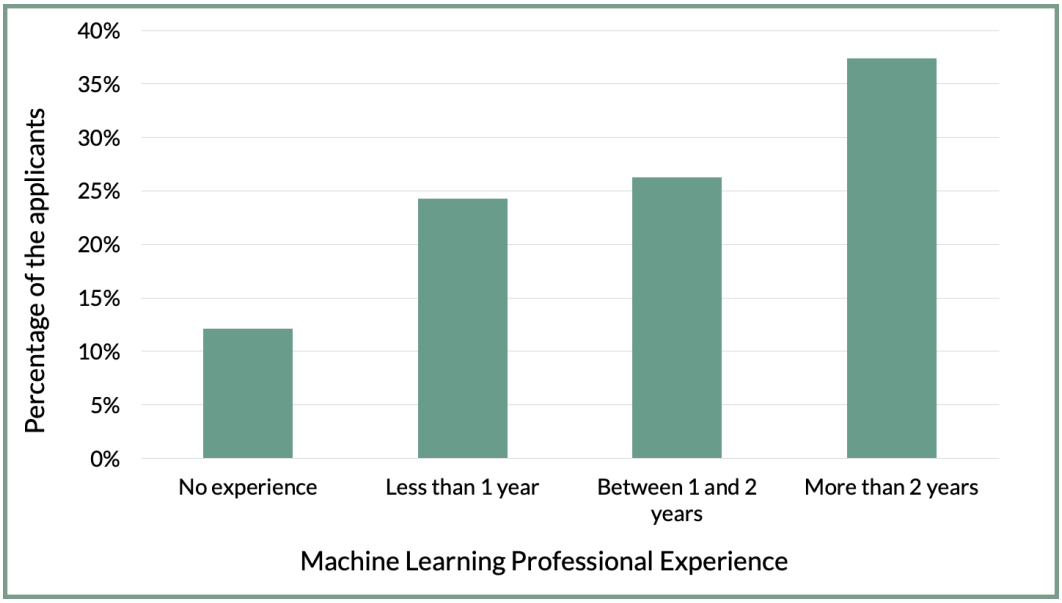

Figure 4: Professional experience in machine learning of the conference participants. Source: on–site survey.

As it can be seen on the chart above, the professional experience of participants was diverse, with **most of them having more than 1 year of experience**.

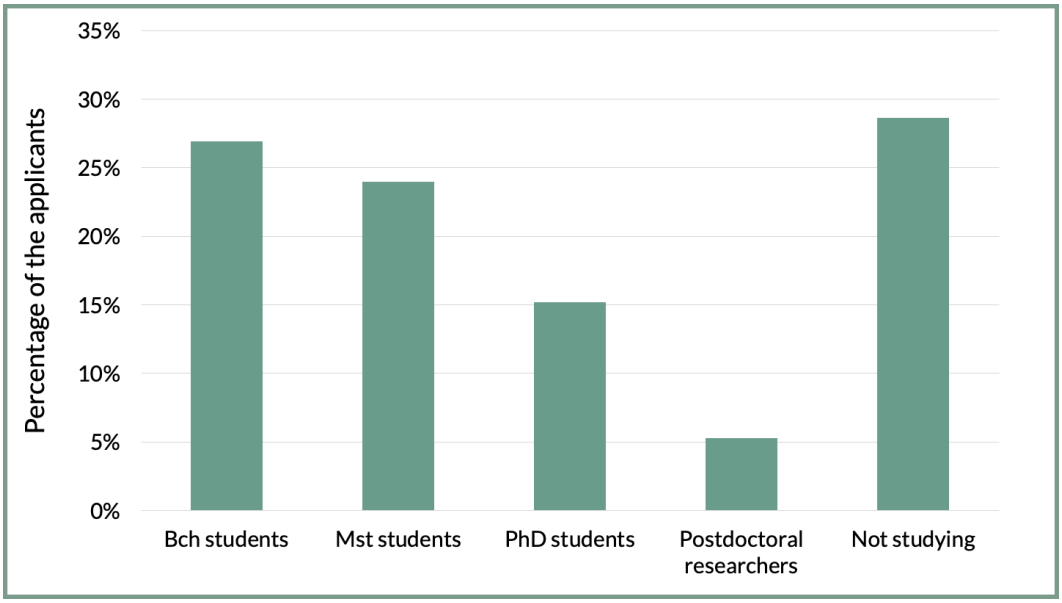

Figure 5: Pursued education level of the applicants. Source: registration survey.

From the chart above we can see that the education level of the applicants was quite diverse with the **majority of them pursuing a degree**.

In the next two questions the applicants were allowed to **choose up to 3 different answers**.

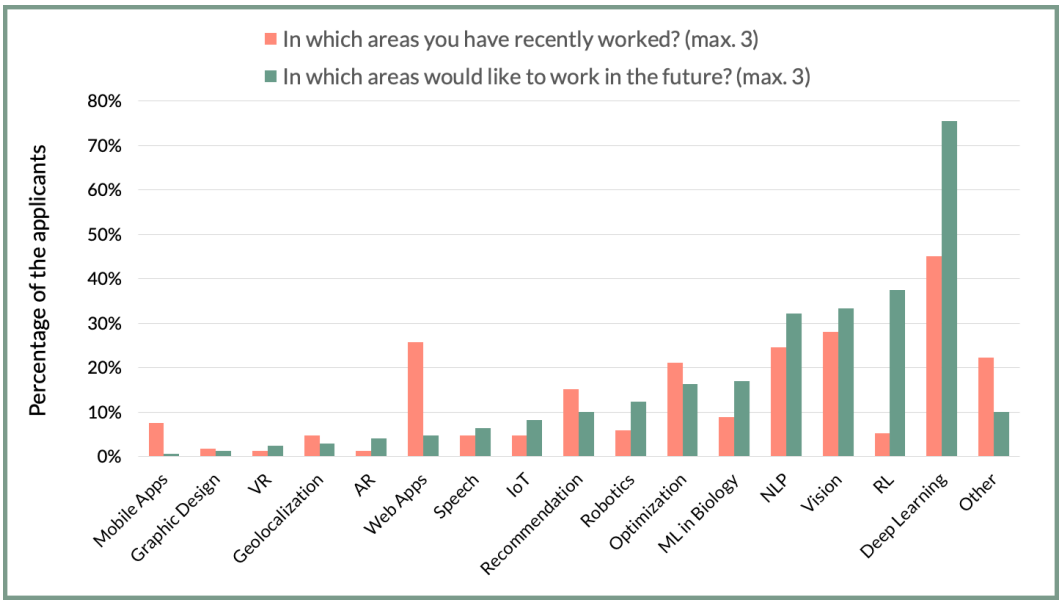

Figure 6: Preferred and recent working areas of applicants. Source: registration survey.

The most popular area in which the surveyed applicants would like to work was **deep learning, as it was indicated by 75,4% people**. The second was taken by **reinforcement learning (37,4%)**, **computer vision (33,3%)** and **natural language processing (32,2%)**. It is worth to mention that a lot of respondents would have liked to work in reinforcement learning, but very few of them had recent experience in that matter.

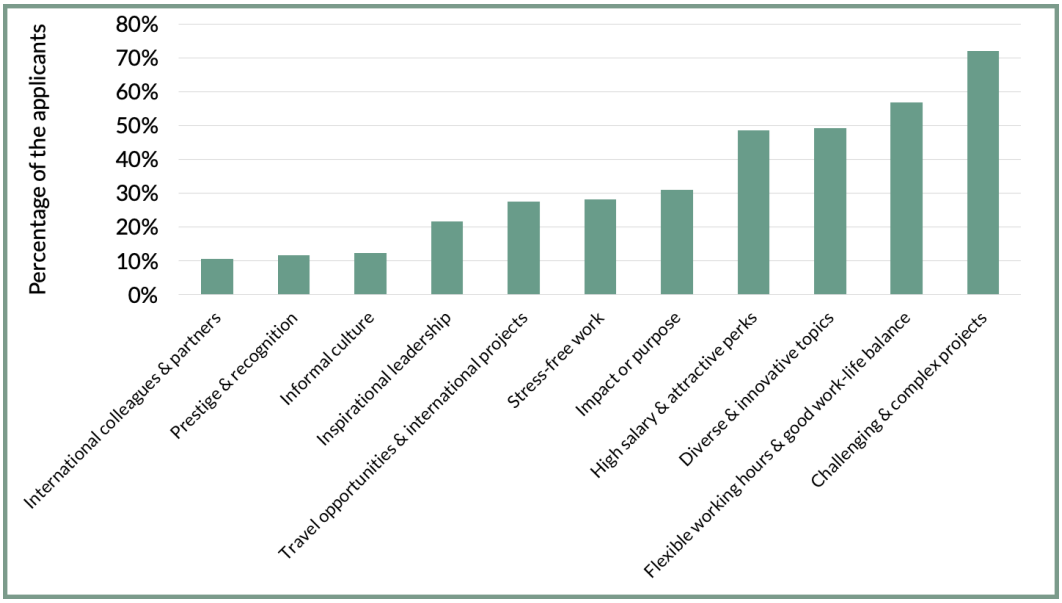

Figure 7: The most important aspects of a work environment. Source: registration survey.

When asked about the three most important aspects that come into play when choosing a job, most of the surveyed applicants pointed out **challenging and complex projects (71,9%)**. Other highly valued aspects were flexible hours and **good work–life balance (56,7%)**, **diverse and innovative topics (49,1%)**, and high salary and **attractive perks (47,5%)**.

3.3 Attendees' opinions

The highest rated aspects of the conference, based on the evaluation survey, were (on 1 to 10 scale, averaged across all received answers): **atmosphere during the event – 8.9**, **program and agenda – 8.6**, and **the availability of information – 8.4**. Both the **poster session** and **comfort** during the event were rated **8.1** by the participants.

The lowest ratings were gotten by the **conference party – 7.0**, as well as **food served throughout the event** and the conference **Slack workspace** (which served as a platform for announcements and communication between attendees), which both received ratings of **7.6**.

Individual talks also were rated by the participants. Of those ratings, the highest were received by **Wojciech Czarnecki** (DeepMind), **Karol Hausman** (Google Brain), **Piotr Mirowski** (DeepMind), **Piotr Bojanowski** (Facebook AI Research), **Faustyna Krawiec** (Poznań University of Technology), and **Michał Kudelski** (TCL Research Europe).

4 Organisation

Figure 8: PL in ML '18 conference organizers team (incomplete). From left to right: top row – Mateusz Kobak, Łukasz Pszenny, Piotr Kozakowski, Agnieszka Sitko, Michał Królikowski, Magdalena Augustyńska, Piotr Węgrzyn, Aleksander Buła, Michał Filipiuk, Kamil Bladoszewski and Magdalena Grodzińska; bottom row – Piotr Styczyński, Michał Zmysłowski, Mateusz Olko and Tomasz Wąs.

We are a team of young people that want to promote machine learning in Poland. Most of us are students of the Faculty of Mathematics, Informatics and Mechanics of the University of Warsaw. Each one of us has a background in Mathematics or Informatics. The reasons why we have organised the conference may differ between organisers, but all of us have been committed to delivering a high–quality event.

From a formal point of view, the conference was organised by two institutions closely cooperating with us: WhyR? Foundation (Fundacja WhyR?) and Association of MIMUW Community (Stowarzyszenie Społeczności MIMUW).

During all three days of the conference, a group of 20 volunteers was working alongside the organisers in a united goal of providing the best possible experience for the attendees.

4.1 Scientific Board

The conference was proudly supported by the Scientific Board which was composed of 11 experts in the machine learning and related fields: **Jan Madey** (Full Professor at the University of Warsaw), **Jacek Tabor** (Full Professor at the Jagiellonian University), **Krzysztof Geras** (Assistant Professor at the New York University), **Krzysztof Choromański** (Research Scientist at Google Brain and Adjunct Assistant Professor at Columbia University), **Henryk Michalewski** (Assistant Professor at the University of Warsaw), **Piotr Miłoś** (Assistant Professor at the University of Warsaw), **Marek Cygan** (Assistant Professor at the University of Warsaw), **Przemysław Biecek** (Assistant Professor at the University of Warsaw and Warsaw University of Technology), **Krzysztof Dembczyński** (Assistant Professor at the Poznań University of Technology), **Tomasz Trzciński** (Adjunct Assistant Professor at the Warsaw University of Technology, Chief Scientist at Tooploox), and **Jan Chorowski** (Assistant Professor at the University of Wroclaw). The Scientific Board guided us through the whole process of preparation of the conference and provided their advice to us in the key moments. The scientific program and the posters were the main topics which were consulted with the board.

4.2 Sponsors

The conference was sponsored by a tremendous number of 14 private companies on 4 different levels: Strategic, Platinium, Gold, and Silver.

The list of sponsors goes as follows: the Strategic Sponsor – BCG Gamma, the Platinum Sponsor – Samsung, the Gold Sponsors: Google, Tooploox, Allegro Tech, TCL, Amazon, Nvidia, RTB House, Microsoft, ByteDance, and last but not least the Silvers Sponsors: Jane Street, Daftcode and Pearson. The conference could not have happened without their support! Special thanks go to BCG Gamma for their continuous mentorship throughout the whole year.

Ten companies set up their booths on four conference floors giving the attendees a chance to learn about the machine learning opportunities. However, the placement of the stands turned out to be not as satisfactory as planned, as some people haven't reached all of them – it's an aspect that will be improved in the next edition.

4.3 Building Machine Learning Community

In order to connect with the wide audience of machine learning enthusiasts, we reached out to a number of machine learning students and research organisations all across Poland. It is our belief that the cooperation with these groups was the main reason behind the increase in the number of participant from outside Warsaw. Moreover, it enabled us to create the first list of such groups in Poland and post it on our Facebook page.

Apart from the cooperation with multiple organisations, we constantly try to engage and network with the rest of the community by participating in other conferences, such as PyData Warsaw and Theoretical Foundations of Machine Learning. This provides us with a better overlook on the problems that affect various individuals and groups, as well as gives us a lot of opportunities for collaboration and a better exposure to a multitude of different ideas.

Moreover, we presented our opinions and expertise during the preparation of the Polish AI Strategy in the Ministry of Digital Affairs that led to the creation of Foundation of AI Strategy in Poland report (Założenia do strategii AI w Polsce). We also participated in the founding congress of the Polish Agreement for the Development of Artificial Intelligence (Polskie porozumienie na rzecz sztucznej inteligencji).

5 Comparison with Previous Editions

Compared to the previous edition of PL in ML: Polish View on Machine Learning, this year's edition significantly grew in size, presenting more speakers, gathering more participants, attracting more sponsors, and adding more variety to the presented lectures. The comparison between the first and second edition is as follows:

- PL in ML '18 had **41 speakers**, compared to 15 in the previous year,
- The second edition also attracted **14 sponsors**, compared to 7 in the first edition,

- Amount of participants also grew, starting from 350 a year before, to **450 attendees** this year – it is worth mentioning, that **this number is limited by the capacity of the venue**,
- Besides a larger amount of lectures as compared to the previous year, in 2018 there were also **six full–day practical workshops**, led by groups of experts in their respective domains,
- Current edition also added **Call for Talks** and **Call for Posters**, to encourage the community to actively participate in the event,
- Another new addition to the conference is the **presence of the Scientific Board**,
- This year's edition also **received honorary patronages**, from institutions such as Minister of Digital Affairs, Minister of Science and Higher Education, President of Warsaw, His Magnificence, Rector of the University of Warsaw, and the Dean of the Faculty of Mathematics, Informatics, and Mechanics.

6 Conclusions

In this work, we studied the problem of organising a machine learning conference through the lens of the Mathematics and Informatics students. In particular, we studied the satisfaction of participants and its connection to the presentations of successful researchers and the industry experts. By conducting paper questionnaires we provided several points of evidence that show that the presentations tended to be of high quality. We reported the average rating of the main conference lectures and the ones with the highest scores. The empirical analysis was also conducted on the opinions about the practical workshops. Visual results of intensity of discussions that the poster session sparked were in line with the numerical values obtained during the questionnaire. We provided several empirical results on different types of presentations that show that lectures given by researchers from leading laboratories are more prone to better ratings (more results are provided in the supplementary material). This means that both the high-quality content of the lectures and the expertise of a speaker can drastically affect the rating given by a participant. Furthermore, we are confident that the general opinions were mostly unbiased due to the fact that the participants of our conference came from diverse set of Polish cities – especially in the comparison with '17 edition.

Based on the above conclusions, we want to improve the next edition of the PL in ML conference.

References

[1] PL in ML 2018 conference webpage, `https://plinml.mimuw.edu.pl`

[2] PL in ML 2017 conference webpage, `https://plinml.mimuw.edu.pl/archive/2017`

[3] PL in ML '18 Facebook event, `https://www.facebook.com/events/1837387293046267`

[4] PL in ML 2018 conference photos,
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[5] PL in ML 2018 conference videos,
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[8] PL in ML LinkedIn page, `https://www.linkedin.com/company/plinml`

[9] PL in ML Twitter profile, `https://twitter.com/PL_in_ML`

[10] PL in ML YouTube channel, `www.youtube.com/channel/PLinML`

[11] WhyR? Foundation webpage, `http://whyr.pl/`

[12] Association of MIMUW Community webpage, `http://spolecznosc.mimuw.edu.pl/`