Lambda Days is a two-day, multi-track conference on functional programming and emerging technologies. The fourth edition of Lambda Days took place at the Auditorium Maximum in Krakow on 9-10th February 2017.

Lambda Days is an event like no other, gathering people passionate about non-mainstream tech and functional languages such as Scala, Erlang, Python, Haskell, F#, Elixir, Lisp and Clojure.

This year’s programme included presentations by some of the most respected industry experts who are defining technology and pushing trends. Our speaker line-up included José Valim, William Blum, David Turner, Kevin Hammond, Heather Miller, John Hughes, Mary Sheeran, Rob Martin, Brian L. Troutwine, Ricardo Terrell and many others, showcasing the strength and diversity of the growing functional programming community.
For the second year in a row Lambda Days took place in **Auditorium Maximum** - one of the most prestigious venues of the Jagiellonian University. Aware of the growing interest in the conference, we've decided to host our keynote talks in the main theater, that can accommodate 600 people.
The number of Lambda Days attendees has been substantially growing.

Lambda Days 2017 was attended by 420 (300 in 2016) software professionals: developers, software engineers, architects, business leaders and executives, as well as students and academics. This makes the 2017 edition the largest Lambda Days conference so far.

Our ticket sales increased by 18.5% compared to the 2016 edition.

Lambda Days participants came from 22 different countries. The majority of attendees came from Poland (71%), however the percentage of visitors from abroad goes up every year.
In response to our Call For Papers we received **62 submissions**. That gave us an opportunity to build a rich programme out of 39 talks (including 4 Keynotes), spread across 6 rooms (three rooms a day).

With the help of our programme committee we strive to build a balanced and diverse agenda.

We had some quality presentations highlighting the importance of community building, history of programming and the upcoming trends. As always most of the talks focused on various areas of functional programming, relevant languages, technologies and innovative tools.

The **Research Track**, organised by the Department of Computer Science of the AGH University of Science and Technology, was fully devoted to the newest academic research projects - powered by functional technologies.

We had a total of 10 speakers, who came from all around the world, presenting their work on different functional programming concepts.
Lambda Days is an event aiming to connect people interested in functional programming, including those, who are just starting their journey in the functional programming world. We want to attract students and young people and help them exploring the benefits of non-mainstream technologies and finding the right tool for the job. This is why, working in collaboration with AGH University of Science and Technology, we have organized a series of free of charge functional programming workshops. Last year we had two beginner level courses on Elixir: “An Ounce of Elixir” - Ladies Night and youngsters edition, one beginner level course on Erlang and one beginner level course on Scala. We gathered **38 participants** in total.

1. "An Ounce of Elixir - youngsters edition" workshop by Rob Martin,
2. "Nothing to fear - it's just Erlang. Let's build an application" workshop by Szymon Mentel,
3. "Nice Scalaz (and Cats) monads you want to use: State, Free, Task as well as Validation" workshop by Mateusz Kubuszok,
Our programme committee contributed greatly to the success of our line-up. We are privileged to work with some of the industry’s most interesting innovators and community leaders.

Kevin Hammond
Professor at the University of St Andrews

Evelina Gabasova
Researcher in the MRC Cancer Unit at University of Cambridge

John Hughes
Co-Designer Of Haskell And Quickcheck

Heather Miller
Director of the Scala Center at EPFL, Professor at Northeastern University

Adam Warski
CTO and co-founder of SoftwareMill

Robert Virding
Co-Inventor of Erlang, Principal Language Expert
A vast majority (81%) of Lambda Days attendees were developers (including tech team leaders, development managers and consultants).

7% of participants were managers of the highest level (owner, CEO, CTO, COO).

10% of all attendees were students and academics.
The conference was visited by guests from 22 countries, 4 continents. 70% of participants live in Poland, 25% came from Europe (1/3 of that from United Kingdom), 3% from United States and 2% from other continents.

49% of Polish participants were based Kraków. The next two biggest groups of guests represented Warsaw (11%) and Wroclaw (11%).

### Attendee demographics by country

- **Poland**: 290
- **United Kingdom**: 29
- **Germany**: 19
- **Ukraine**: 13
- **United States of America**: 12
- **Slovakia**: 8
- **Belarus**: 7
- **Sweden**: 5
- **Czech Republic**: 5
- **Switzerland**: 4
- **France**: 4
- **Italy**: 4
- **Hungary**: 2
- **Israel**: 2
- **Other**: 8

Other: Austria, Azerbaijan, Belgium, Denmark, Finland, Ireland, Russia, South Africa

### Polish attendee demographics by city

- Krakow - 49%
- Warsaw - 11%
- Wroclaw - 11%
- Gdansk - 3%
- Gliwice - 4%
- Poznan - 4%
- Bialystok - 2%
- Lodz - 2%
- Torun - 2%
- Other - 12%

such as Bydgoszcz, Katowice, Lublin, Rzeszów, Wieliczka, Tychy, Tarnowskie Góry, Zabrze and others
Lambda Days attendees and speakers represent both **start-ups** and **industry-leading companies** from various market sectors, such as web development, telecoms, gaming, online betting and gambling, e-commerce, ad tech and new media, finance and banking, and various others.

The conference is organized in collaboration with the Department of Computer Science at **AGH University of Science and Technology in Krakow**, who is responsible for the selection of presentations for the **Research Track** - a parallel panel devoted to scientific presentations.

This year, the best papers are published in the Special Section on ‘Functional Paradigm for High Performance Computing of Future Generation Computer Systems (IF=2.430)’ in the ‘Computing and Informatics Journal’.
Since day one Lambda Days is about combining the best of the world of academia and commercial innovation to foster inspiration and growth.

Our ongoing collaboration with AGH results in a steady increase of quality and popularity of our Research Track - the conference attracts more and more academics and research workers from all around the world.

We were pleased to welcome Computer Science Lecturers, Researchers and Students, representing leading tech Universities.
The success of the event lies in the coherent promotion strategy. We are very satisfied with both the outcome of the informational campaign and the final shape of the conference.

Lambda Days was promoted through:
- E-mail marketing;
- Social media channels, such as Facebook, Twitter, LinkedIn, Google+ and Reddit;
- Content distributed by Lambda Days media partners.
7.1. Website traffic

Between December 1 2016 and February 23 2017 Lambda Days website received **25,695 page views** from **13,853 users**. That is 4,000 users more than last year.
7.1 Website traffic

7.1.1 The Audience Overview

33.37% of new users were from Poland, 12.81% from US, 9.02% from United Kingdom, 5.40% from Germany, and 5.55% from Russia.
### 7.1.2 The most visited pages

The most visited speaker pages were: Claudia DoppioSlash (660 unique page views), Rob Martin (642 upv), José Valim (577 upv), Tomasz Kowal (518 upv), David Turner (454 upv), Idalin Bobé (424 upv).
7.1.3 Sources

The highest number of new users on www.lambda-days.org were directed to the website via a direct link (40.09%). One of the main sources of traffic was Google Search (30.01%). This might indicate that a high number of recipients have already heard about the conference and wanted to learn more.

Next group of visitors found us by clicking a link on Twitter (12.49%).

Another popular source of information on Lambda Days is Facebook with 4.60% of new viewers.

After that there is a Polish IT-industry event database website Crossweb.pl (1.95%), which was one of the conference’s media partners.
Among all Social Media we have used, Twitter was the most effective promotional tool. @LamdaDays profile has 1500 followers. From September until end of March we have tweeted around 280 messages.

- Tweets - total number of tweets published from Twitter accounts (includes replies as well)
- Followers - number of people who are following Twitter accounts
- Engagement - the sum of interactions received for all tweets: retweets, replies, quotes and likes
- Traffic - Total clicks on all the Ow.ly links we've posted
Engagement is the sum of interactions received for all tweets: retweets, replies, quotes and likes. From September until end of March there were around 1 500 interactions:

- Quotes: 46
- Retweets: 733
- Likes: 672
- Replies: 42

![Graph showing engagement over time](image-url)
### Engagement for Posted Tweets

<table>
<thead>
<tr>
<th>Date</th>
<th>Message</th>
<th>Retweets</th>
<th>Replies</th>
<th>Quotes</th>
<th>Likes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 20, 13:25</td>
<td>@LambdaDays: First 2017 #LambdaDays video is available! See Keynote: Why Functional Programming Matters by @rjmh and Mary Shearan <a href="http://ow.ly/eO6k309a9Kv">video</a></td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Mar 07, 15:15</td>
<td>@LambdaDays: #LambdaDays 2017 highlights <a href="http://ow.ly/eoDQ309FusP">video</a> thanks again everyone! #OMGkrk #Erlang #Elxirlang #Clojure #Fsharp #Haskell #Scala</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Feb 14, 16:26</td>
<td>@LambdaDays: Slides: Building a GraphicalIDE in Elm/Purescript for an EmbeddedLanguage that Compiles to the ErlangVM <a href="http://ow.ly/y91g30SExk">slides</a> @doppioslash</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Mar 14, 12:00</td>
<td>@LambdaDays: #Elxirlang and money by @snapper47 is now available on our website <a href="http://ow.ly/dkYx3095wCk">video</a> #OMGkrk</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Mar 18, 09:55</td>
<td>@LambdaDays: New video! A song of types and errors, or how I found myself leading teams of #Scala developers @ValentinaKasias <a href="http://ow.ly/Sni309Qjl">video</a> #OMGkrk</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Mar 09, 12:43</td>
<td>@LambdaDays: Building a GraphicalIDE in #Elm/#Purescript for an EmbeddedLanguage that Compiles to the #Erlang VM @doppioslash <a href="http://ow.ly/yoli309Fybi">slides</a></td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

Above are the most popular tweets. Tweets with valuable content, such as videos or slides from presentations, capture the Lambda Days audience’s attention the most. Also the tweets around conference related events, including workshops or after-party get noticed more than regular tweets promoting the conference.
13 promotional e-mails (containing our sponsors’ logos) were sent out between 1 September and 21 February, with a summed-up number of 4,502 unique opens and 858 unique clicks.

The table shows: the list of e-mail shots sent out to registered attendees, speakers and conference prospects; The prospective delegates e-mailing base (number of receivers) for each e-mail shot, Total Opens, Unique Clicks, Total Clicks (on any link in the e-mail), Click-Through Rate.
All talks presented at Lambda Days 2017 have been recorded. The videos are published on the Erlang Solutions channel at youtube.com and promoted through Lambda Days social media and Lambda Days website.

This is what the numbers were on 30.03.2017:

- John Hughes and Mary Sheeran: Keynote: Why Functional Programming Matters - 5 326 views
- José Valim - GenStage and Flow - 2 466 views
- Claudia Doppioslash - Building a Graphical IDE in Elm/Purescript for an Embedded Language that Compiles to the Erlang VM - 1 868 views
- David Turner - Some History of Functional Programming Languages - 1 218 views
- Emin Hasanov - Using Clojurescript to launch iOS/Android apps to 1M users - 1 050 views
- Tomasz Kowal - Elixir and money - 1 048 views
- Nikhil Barthwal - Implementing Event-Driven Microservices Architecture using Functional programing - 902 views
7.5 Marketing materials
Getting the post-conference feedback helps to evaluate and improve the event in every aspect. We have analyzed the results of a survey sent to all speakers and attendees.

Q1: How did you hear about Lambda Days Conference?

Many of the Lambda Days attendees were signed up for the conference by their company (36.11%), heard about it from a friend (27.78%) or had already participated in the previous edition (22.22%).

For us the most important takeaway from this is that over a half of the participants are attracted through the good experience they or their friends had and that people recommend the event to their friends and coworkers.
Q2: What was your overall impression of the conference:

- Great: 57.8%
- Very good: 15.6%
- Just Okey: 24.4%
- Lots to Improve: 2.2%

"Overall - loved it!"
"It would be great to have an additional tutorial track, to get people up-to-date to FP languages."
"Would be cool to be able to vote online and add some comments about the presentation right after the talk."
"Two things: 1- THANK YOU! 2- YOU’RE AWESOME! ;D"
"Love the enthusiasm that people showed for functional programming and getting informed about new trends and classical stuff."
"There could be more space where people can hangout and talk during the break."
"Lambda Days is a coders' Open’er - a trip into the higher-level world of mathematics, and history. Keep it that way, please!"
Q3: Which subject were you most interested in?

TOP 7
1. Foundations of Functional Programming 17.95%
2. Elixir 15.38%
3. Trends in software design/community building 15.38%
4. Language Design 12.82%
5. Case studies from technology companies 10.26%
6. F# 7.69%
7. Elm 5.13%

Q4: In general what did you think of the talk quality?
Q5: Which presentation did you enjoy the most (excluding Keynotes)?

**TOP 7**

1. GenStage and Flow - José Valim
2. Elixir and money - Tomasz Kowal
3. Practical Lambda Calculus - Jonas Winje-Einar Høst
4. Going bananas with recursion schemes for fixed point data types - Paweł Szulc
5. Some History of Functional Programming Languages - David Turner
6. The Thrilling Adventures of Lovelace, Babbage and the Analytical Engine - Sydney Padua
7. The Dramatic Consequences of the Open Source Revolution... - Heather Miller
Other highly praised talks are:

1. Automatically Deriving Cost Models for Structured Parallel Processes Using Hylomorphisms - Kevin Hammond
2. I can haz no Futures? - Michał Płachta
3. Implementing Event-Driven Microservices Architecture using Functional programming - Nikhil Barthwal
Q6: How useful to your job/work were the talks?

“Gen Stage and Flow was a good match with my day job.”

“I just am not a functional programmer, but maybe in the future this can be useful.”

“Testing with mutants is an interesting idea to explore in MongooseIM development.”

“Some useful practical things, but the chief gain is opening one's mind for new ideas, theories, points of view etc. When you work long time on a single technology/codebase your mind closes, as if you were going along a rail. An event like this helps to "derail" your mind, in a positive way.”

“Very helpful, very nice! Great crew!!”

“New perspectives. New application areas. Friendly enthusiasm!”
Q7: Is there any other topic you would like us to cover next year? Any particular speaker you would like to see at Lambda Days 2018?
A special “thank you” goes out to all Lambda Days sponsors. Sponsorships allows us to provide a high-quality event and great opportunities for the growing community of inventors and users of non-mainstream software technologies.
SEE YOU NEXT YEAR!

Lambda Days 2017 was undoubtedly a big success. We managed to maintain a very high level of participation in both technical (Talks and Workshops) and social (Lunch and Coffee Breaks, After Party) parts of the event.

The conference was very well received, what has been proved by the comments on social media.

The date for Lambda Days 2018 is already established. The conference will take place on **22-23 February 2018** at the Auditorium Maximum UJ in Krakow.

We look forward to working with you on the next edition of Lambda Days!