## P-TECH Poland partners with the National Polish Radio Symphony Orchestra to create a web application with AI (NOSPR AI)

The P-TECH Poland network launched in August 2019 with three schools spread across the cities of Katowice and Wronki. Within its first year school year two schools in Katowice joined a rich collaboration with a number of public and private partners for the National Polish Radio Symphony Orchestra AI project (NOSPR AI).
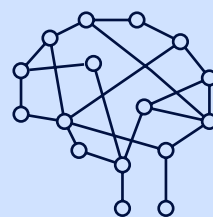
The schools are:
— Śląskie Zakłady Techniczno - Naukowe
  (Silesian Technical and Scientific Works)
— Zespół Szkół Technicznych i Ogólnokształcących
  nr 2 (Technical and General Secondary School
  No. 2)

Inspired by a similar Watson AI project with the National Museum of Wroclaw in Poland the NOSPR AI application is a true example of public-private collaboration. The key partners driving the project included IBM, Fujitsu, ING Bank, the National Polish Radio Symphony Orchestra, the City Hall of Katowice and the two P-TECH schools located in Katowice.

The objective of the NOSPR AI project was to pair a web application and AI with classical music. As of July 23, 2020 users can use the application to ask questions about the musical masterpieces, the 1800-seat symphonic concert hall, or the orchestra and receive immediate answers.
One simply needs internet and a device with a microphone and speaker (computer or mobile). The AI web application uses IBM's Watson Assistant, which leverages natural language processing that understands human language and can provide quick, accurate responses.

P-TECH students were engaged in two main stages of the project, building the bank of potential user questions and testing the application. P-TECH students collected nearly 70% of 9000 questions used for the Watson Assistant AI applications. One of the P-TECH industry partners, Fujitsu, provided the web application to collect the questions. After listening to each masterpiece, students would submit the questions such as:
— How much does the piano weigh?
— What is the name of the conductor?
— What is the orchestra's average age?

Students agree that building such a robust and unique bank of questions was no easy feat. In the words of one of the students, Piotr, coming "up with such unique questions, that would not be repeated by my peers" was quite a challenge.
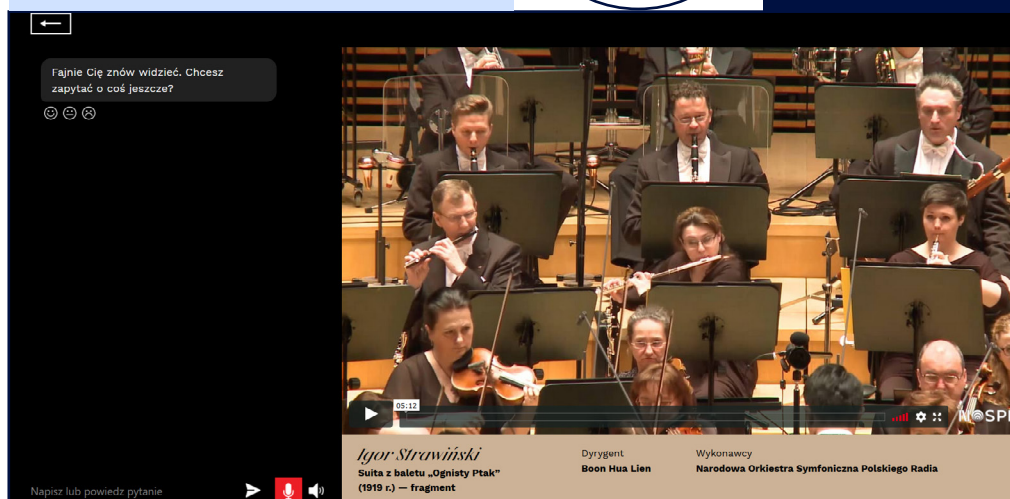
English Press Release

Full Polish Press Release

NOSPR AI

Piotr Scholz,
P-TECH student

NOSPR AI
Application

Fajnie Cię znów widzieć. Chcesz zapytać o coś jeszcze?

Napisz lub powiedz pytanie

Igor Strawiński
Suita z baletu „Ognisty Ptak"
(1919 r.) — fragment

Dyrygent
Boon Hua Lien

Wykonawcy
**Narodowa Orkiestra Symfoniczna Polskiego Radia**

The answers to the all of the possible user questions were then crafted by the NOSPR musicologists. Once complete the P-TECH students were responsible for testing the NOSPR AI application. As Kasia Świętochowska, a NOSPR Arts & Tech Programmer attests, the students didn't allow any challenges to hold them back.

In accordance with the IBM Skills Mapping exercise results, the P-TECH students of Katowice are pursuing a computer science pathway with a focus on AI and Machine Learning. True to the P-TECH experience and objectives, the NOSPR AI collaboration proved to be an invaluable hands-on immersion tied directly into potential career paths and real-life client projects.

When asked about what drew him to join P-TECH and this project, P-TECH student, Paweł Gawłowski shared that the program, "gives me the opportunity to expand my IT skills, and in the future I would like to work as an IT professional."

"I am very impressed with the involvement of the students - in the initial training, in less than 3 weeks, at the very beginning of the pandemic (when communication was difficult), we collected 9,000 questions, most of which were generated by P-TECH students. We did not expect such a motivation."

Kasia Świętochowska,
NOSPR Arts & Tech Programmer
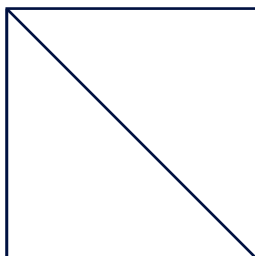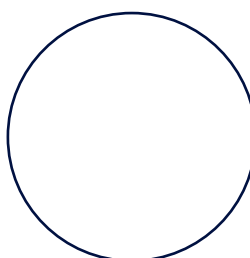
P-TECH students during a Watson, CoArt, NOSPR workshop provided by Krzysztof Grzęda, NOSPR AI Project Leader

School director, Aldona Skubiszewska shared that the focus on Artificial Intelligence was a major draw for students as it's "a future-oriented branch of computer science … and its uniqueness." Prior to this project, "Artificial intelligence was mainly associated by students with e.g. smartphone applications. Thanks to the NOSPR AI project and vocational education, students learned about its application in practice" and the exposure went "beyond the possibilities of school education."

The learning won't stop with the conclusion of the project. The P-TECH students will visit the National Polish Radio Symphony Orchestra in the future and explore the concert hall and see first-hand how their contribution enhances the user experience from the classical music hall to the IT infrastructure behind the equipment, sound, lighting etc...

The public-private collaboration that brought the NOSPR AI project and P-TECH to life addresses deeper systemic needs. On the industry side student integration into this project added an additional layer of insight. Piotr Wójcicki, one the tech leads from Fujitsu, a key industry partner stated that, "Contact with young "adepts of computer science" allows us to look with their eyes at our industry, which is incredibly dynamic."
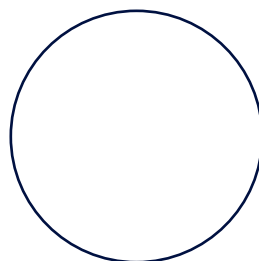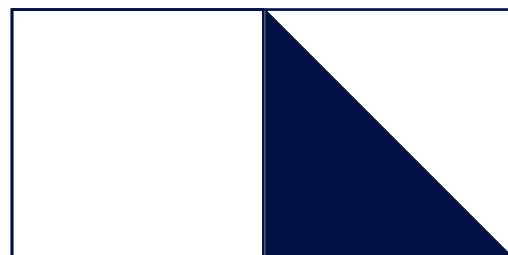
Aldona Skubiszewska, School Director, Zespół Szkół Technicznych i Ogólnokształcących nr. 2
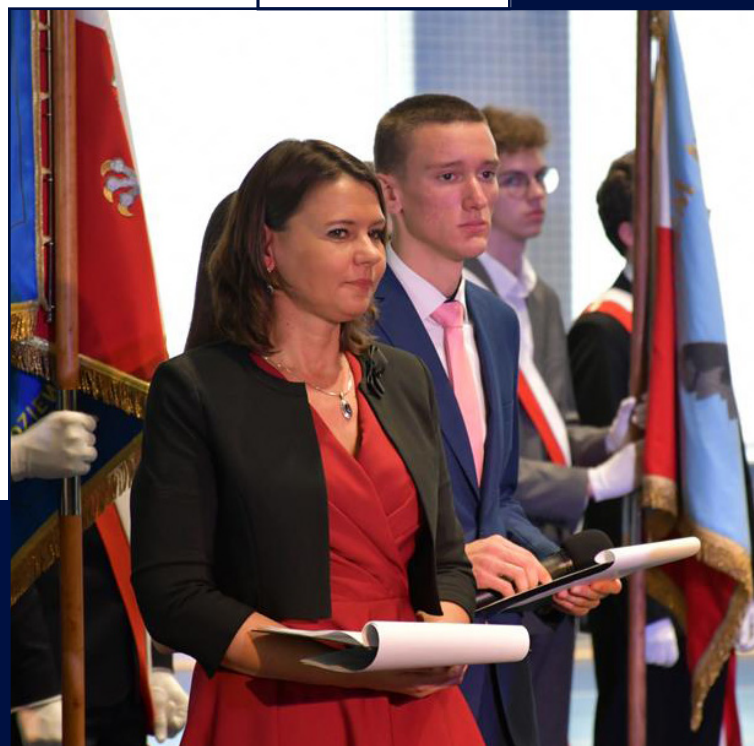
Marcin Krupa, Mayor of Katowice, speaks to the skills development and workforce need addressed through P-TECH for his city.

"The global digital transformation and the changes related to it result in a constantly increasing demand for specialists in the field of information and telecommunications technologies. Experts emphasize that the demand for employees on the IT market significantly exceeds their supply …. Being aware that the number of IT graduates and students in the future will not be able to meet the growing market needs, a year ago we decided to participate in the P-TECH pilot educational program … Such joint action of partners from seemingly two different worlds, business and education, gives young people a chance to get a job after graduating from high school, thereby increasing the human resources potential of both our city and the entire region."

Marcin Krupa,
Mayor, Katowice

A special thank you to our key collaborators

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Adam Suprynowicz, Music expert, NOSPR AI trainer
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ING:
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