

B O T K I N · A I

Intelligent Medical Data Analysis Center

Project Overview



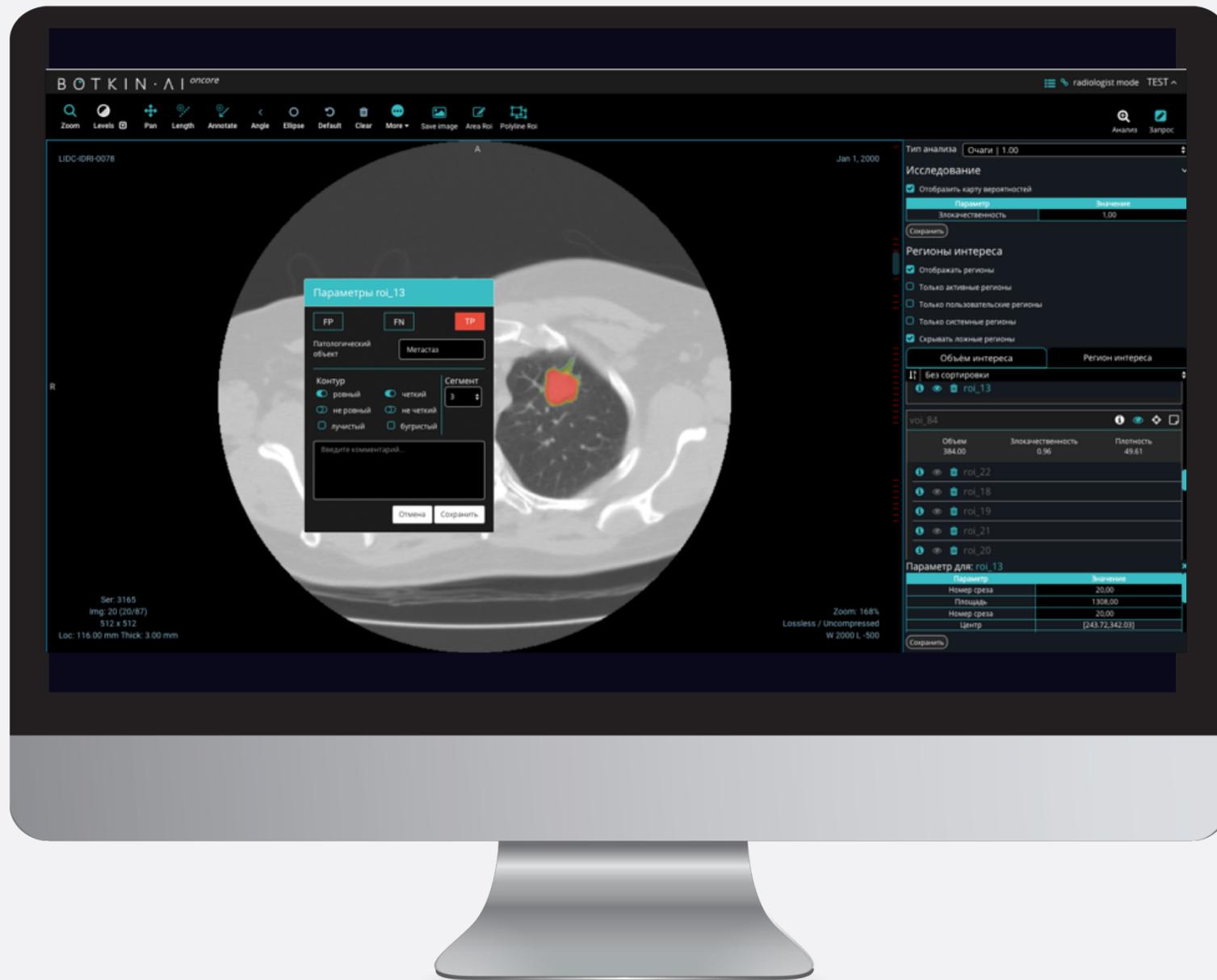
Description

Botkin.AI is a software platform for diagnostics and disease risk prediction based on mathematical patient representation models and AI technologies.

Key Features

- A patented proprietary technology for building and using mathematical models of patients
- Applicability in diagnostics, risk assessment, clinical trials, and scientific research
- Custom IT tools for integration with medical databases and visualization of output data
- Compatibility with international standards and protocols for easier export of features

Diagnostic Image Recognition and Analysis



Visualized image analysis and recognition

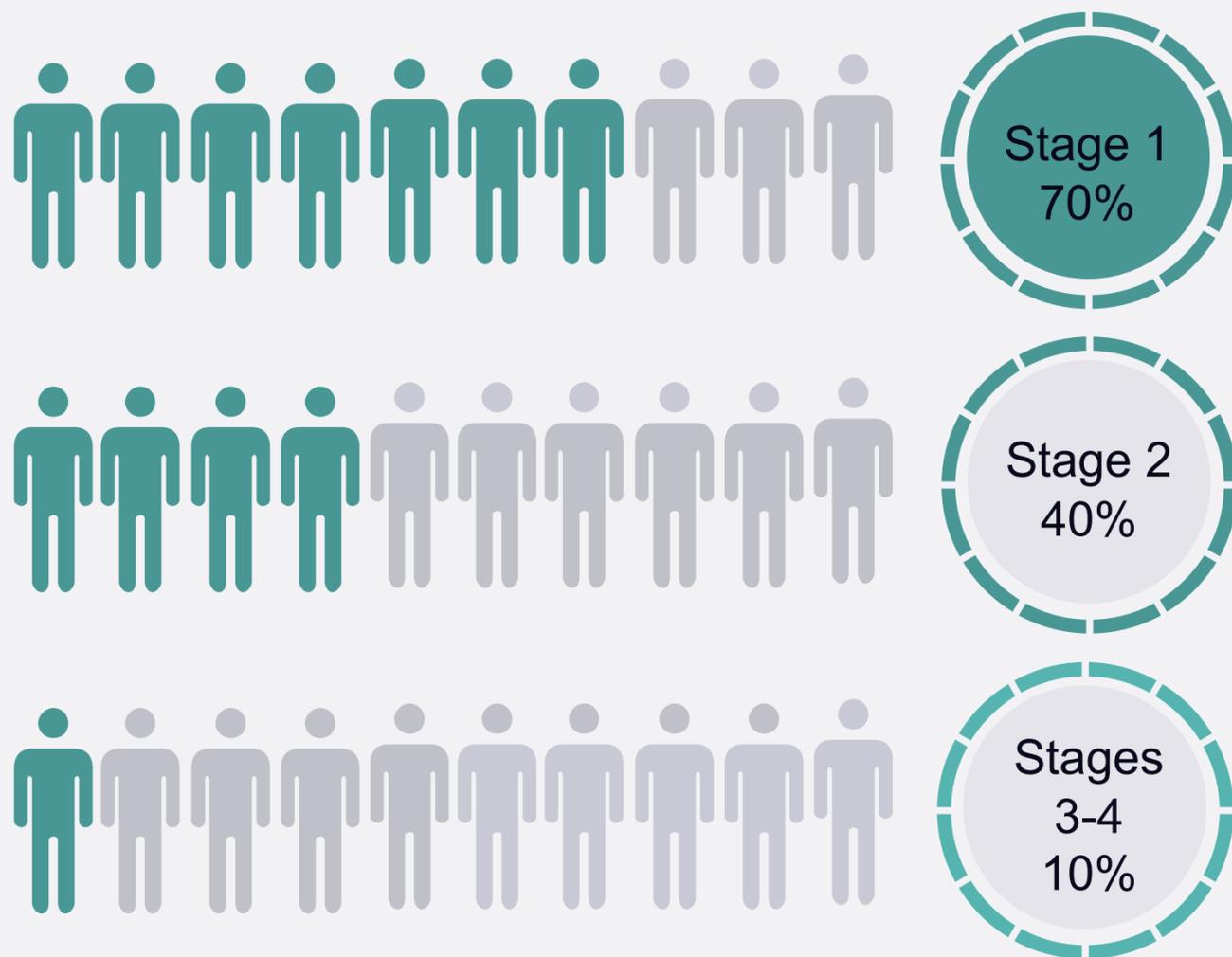
The radiologist can receive detailed information on the location and properties of the Regions of Interest (ROI) found in every slice.

The power of a multi-modal DICOM viewer

- ✓ Information about discovered Regions of Interest (ROI)
- ✓ Information about discovered Volumes of Interest (VOI)
- ✓ Validation of image recognition results by physicians
- ✓ Custom area mapping and feedback tools for radiologists

Project relevance

Example: lung cancer

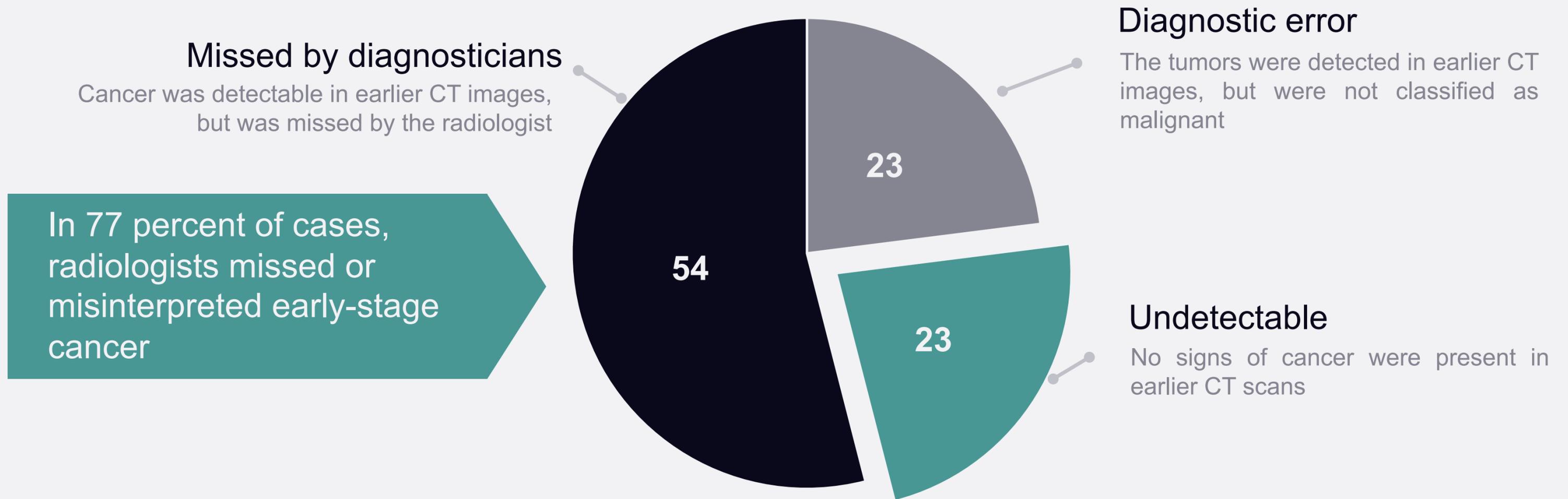


1 Lung cancer is one of the most widespread forms of cancer

2 The 5-year survival rate depends significantly on the stage when the patient is diagnosed – from 70-80 percent for Stage 1 to 10-13 percent for Stages 3 and 4

3 Roughly 70 percent of lung cancer cases are discovered on Stages 3 and 4

Lung cancer diagnostics accuracy analysis



Source:

Retrospective Review of Lung Cancers Diagnosed in Annual Rounds of CT Screening, American Journal of Roentgenology (AJR)
<https://www.ajronline.org/doi/full/10.2214/AJR.13.12115>

Screening (re-viewing) of chest CT diagnostic images

Objective:

- automatic re-review of diagnostic images, in which radiologists did not detect malignant in the lungs

Goal:

- Increased detection of cancer, especially in the early stages



Clinics

The company install developed DICOM gateway for integration with PACS and anonymize images. Clinics upload anonymized chest CT scans.

Artificial intelligence

The uploaded CT scans are analyzed by Botkin.AI

Radiologists

Radiologists verify the results of analysis

Results

Physicians at the clinics receive access to the scans with signs of lung cancer

Development history



2017

R&D and Prototype

Establishment of the project's team

Top 10 in the global accelerator rating of the **Bayer Corporation**

Seed investment from the Primer Capital fund and executives of Expobank

2 Russian patent applications and 2 PCT applications for medical AI technologies

Acquisition of **Skolkovo** residential status

2018

Product Development and Launch

Release of a multimodal product for analysis and visualization of **diagnostic images**

Development and integration of a product for analysis of chest CT images **for diagnosing lung cancer**

Building of models for analysis of **mammographic** and **digital x-ray** images

Launch of **pilot projects** at clinics in **4 regions of Russia**

Primer Capital receives the «**Venture Investor 2018**» **National Award** for its investment into the project

Technology for building and using digital models of patients

Structured Data



Data from electronic health records and test results

Unstructured Data

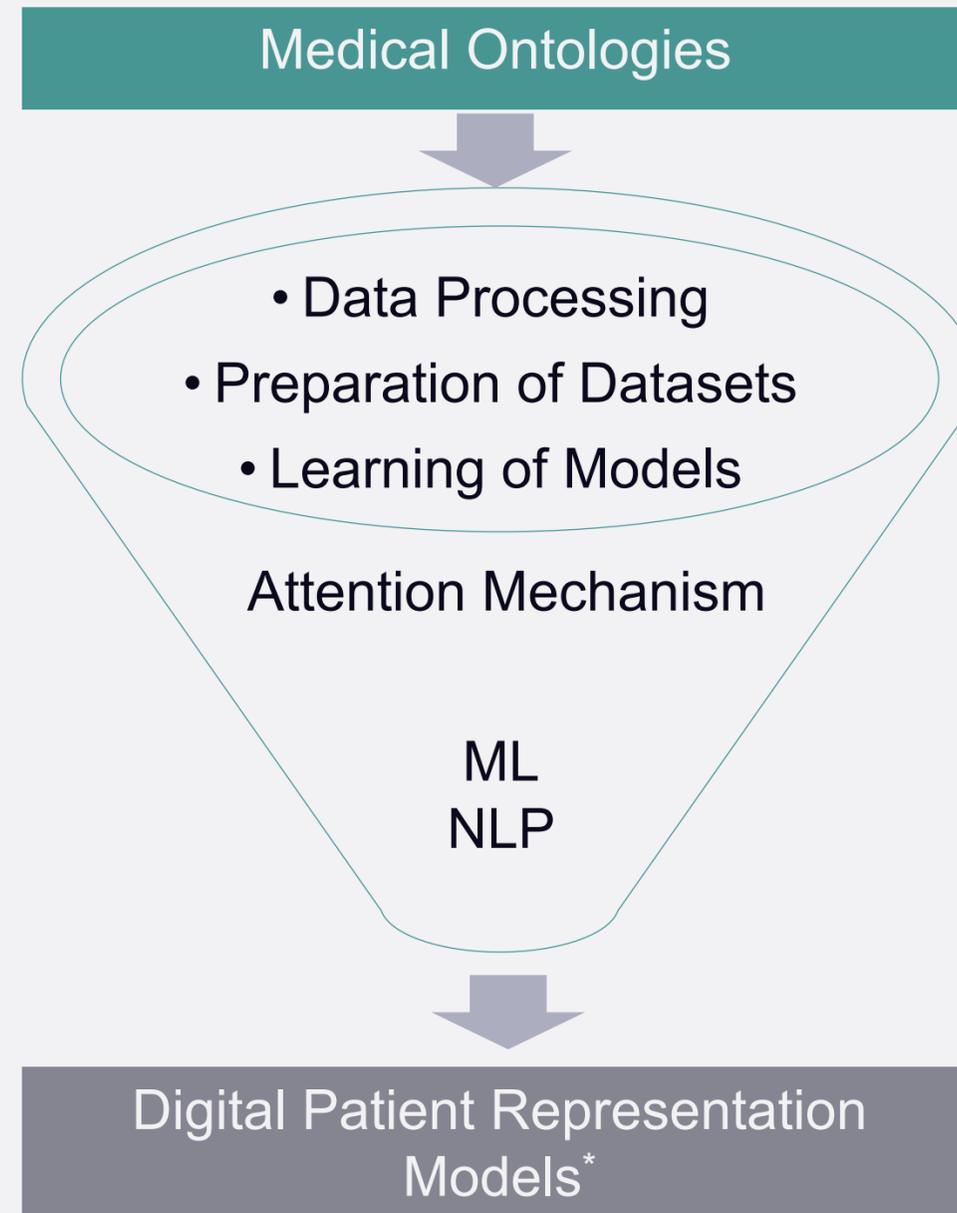


Any medical records

Images and Signals



CT, MRI, ultrasound, mammographic images, ECG



Presentation of Output Data

- diagnoses
- predictions
- analytics



Visualization of Importance

Visualization of facts' importance within the context of each returned result



Visualization of Medical Data

Medical images, objects, probability maps, ROI maps

Product Development

Product Development

Up to 1st quarter
of 2019

Detection of pathologies in mammographic images

Screening of mammographic images for early diagnostics of breast cancer

Recognition of objects in chest X-ray images, including:

- ✓ Atelectasis
- ✓ Cardiomegaly
- ✓ Infiltrative changes (pneumonia)
- ✓ Peripheral lung formation
- ✓ Pneumothorax
- ✓ Pleural effusion
- ✓ Emphysema
- ✓ Pulmonary edema

Our Contacts



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Thank you!