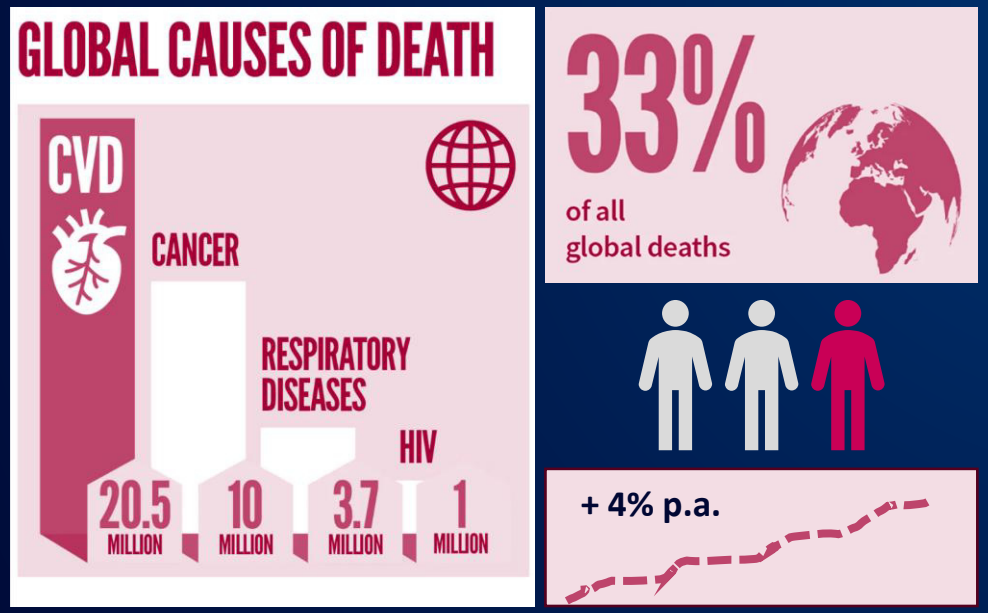
ASAP

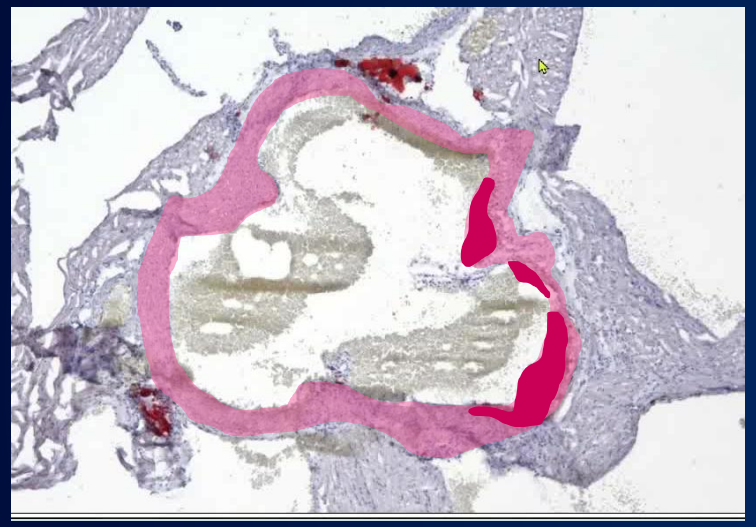
research automation

Widespread Disease

Cardiovascular diseases are the number one cause of death globally, responsible for over 33% of all deaths and over 17 million deaths per year worldwide. A large bottleneck in the development of new medication is the manual analysis of microscopy images.

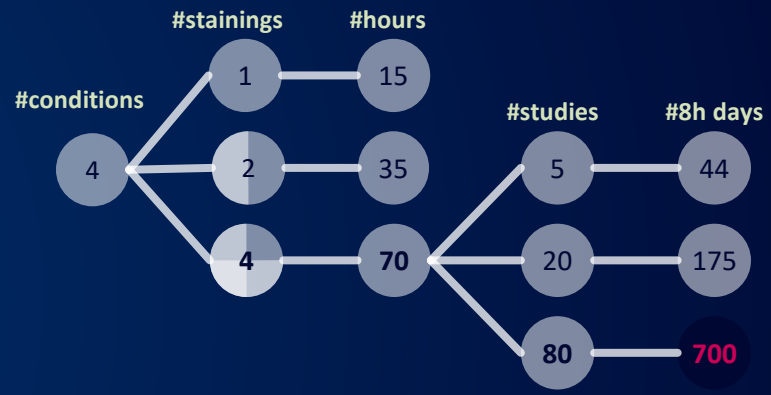


Tedious Manual Analysis



The development of new medication depends on animal studies. These tissue samples show the effectiveness of drugs. Researchers have to manually outline different tissue structures, such as the vessel and plaque deposits, which takes 4-5 minutes for a single image.

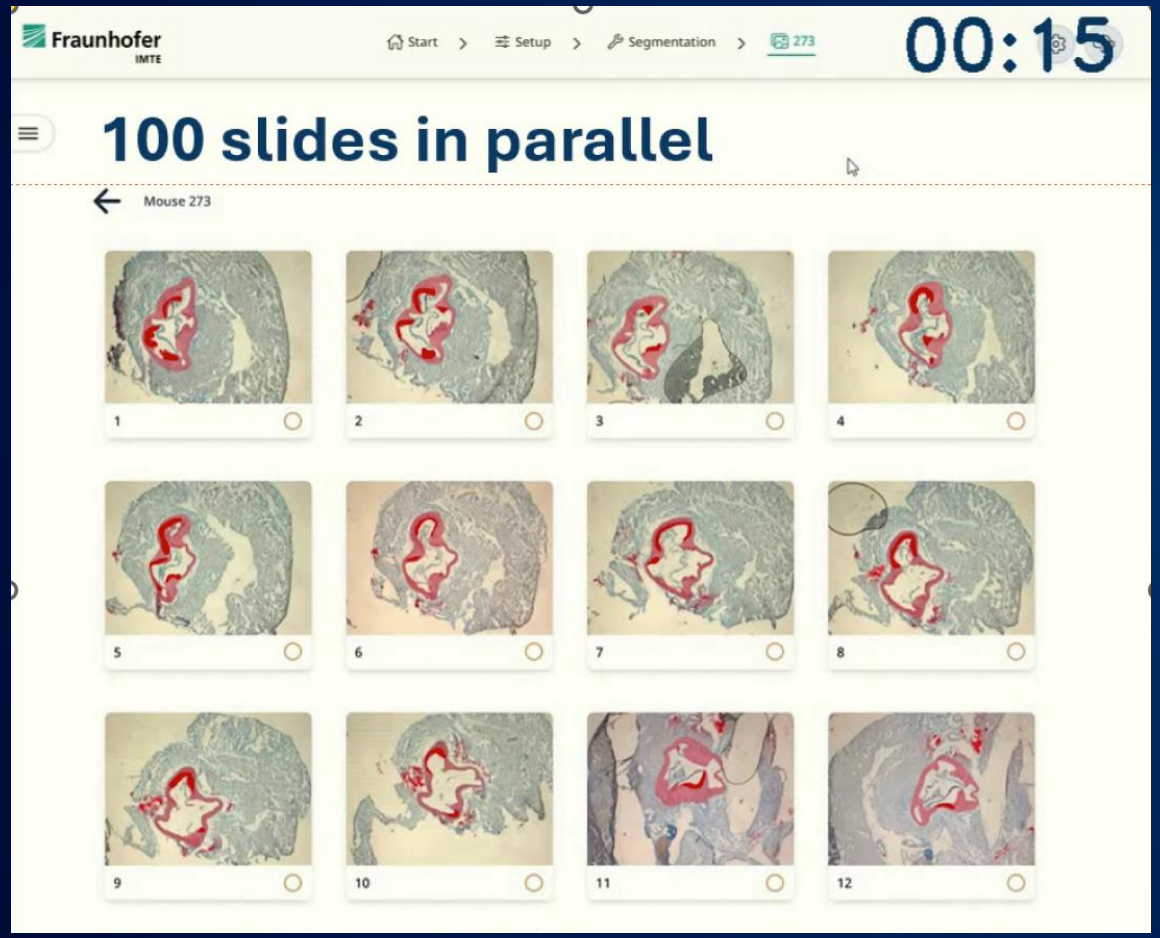
For a single study, hundreds of images need to be evaluated to gain statistical significance. Generating high costs in labor.



Large research organizations perform many studies and spend up to 700 full-time workdays per year on evaluation.

This corresponds to 3 years of labor.

On Demand Software Solution



ASAP offers an expert AI to automatically analyze complete studies in seconds, reducing the workload for pharma to a few weeks.

3 years

3 working weeks

Transfer to new Applications

One limitation of conventional AI agents is the scalability, as every agent is fitted to a specific combination of disease, tissue type and imaging modality. Thus, for each new application, the data must be prepared, the AI must be trained, stored, and maintained afterwards.

As there are hundreds of diseases, tissue types, and imaging modalities, thousands of AI agents would be required. This includes expensive data preparation, training, and storage / maintenance for each agent.

ASAP Foundation Model

Instead, we at ASAP developed a new foundation model approach. Thus, there is no need for training a model for each task, as our model solves every task.

The researched can enter the desired structure as a prompt to our model (just liked ChatGPT, but entirely image-based), which then provides this structure in all the remaining data. This does not require any new training and provides an immediate analysis without waiting times for training.

Data preparation

Training

Stored AI

Thousands of trained AI's required

Annotate desired structure in image

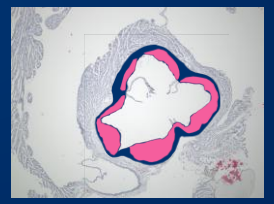
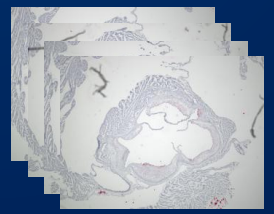
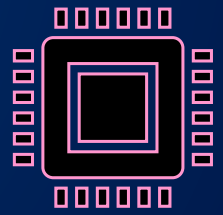


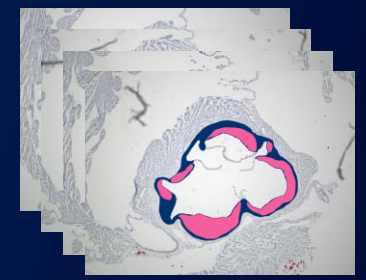
Image and structure as Prompt



Remaining unannotated data



ASAP Foundation Model
No more training



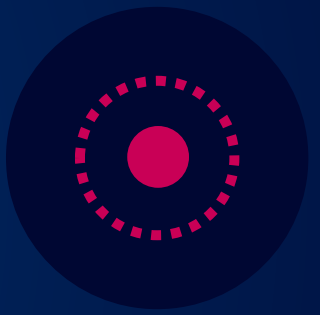
Detected Structure in complete study

Unique Selling Points

Fast

Accurate

Reproducible



Adaptable

In a recently published paper, where we reconstructed a pre-clinical study, we could show that our expert AI is fast, accurate, reproducible and adaptable to new challenges.

Unique Selling Points

Focus

Contracts

Medication

Patient Care

This means:

- Scientists can focus on their research,
- A higher number of commissions for contract research organizations,
- A faster drug development for pharmaceutical companies, and
- Ultimately a better patient care.

Business Model

ASAP is an on-demand software platform with a **Foundation model** for tissue segmentation and offers the following:

Pay per study:

- Provides easy access and is attractive to small research institutions with limited budgets.
- Citations of ASAP in academic journals enhance visibility and credibility.

Software licensing:

- Permanent access to ASAP will be available through an annual license.
- This model fosters long-term relationships with large clients, such as Contract Research Organizations (CROs).

Competition

	Cancer	Heart disease	Cell counting	Segmentation	Tailored AI	Foundation Model
indica Labs	✓	X	✓	○	✓	X
VAIDR	X	X	✓	✓	X	X
FH MIKAIA	○	X	✓	X	○	X
VISIOPHARM	✓	X	✓	○	✓	X
PROSCIA	✓	X	✓	○	✓	X
PathAI	✓	X	✓	X	✓	X
ASAP	X	✓	X	✓	✓	✓

ASAP is the only solution on the market for the characterization of tissue samples for heart diseases. Most of the competitors are focusing on cancer research, which relies on cell counting. A relatively simple task compared to the complex tissue characteristics of cardiovascular diseases. In addition, ASAP offers the only foundation model for histopathology.

Team

Dr. Maik Stille

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Nele Blum

Johann Engster

Dr. Tobias Reinberger

Our Team consists of Nele and Johann our AI experts, Maik who is our group lead and has the intuition for the right decisions, Tobias who speaks the language of our customers and Max who is responsible for the market and the strategy.

ASAP

research automation

Accelerates research from months to minutes.