medDARE

CASE STUDY

ADVANCING PROSTATE MRI DIAGNOSTICS THROUGH DATA COLLECTION AND ANNOTATION

CLIENT'S PROFILE

Country: Western Europe
Size: 1,000+ employees
Industry focus: Developing advanced software solutions for detecting diseases in prostate MRI scans

OVERVIEW

The client, a healthcare technology company, is developing AI-powered software to detect diseases in prostate MRIs. To accelerate the development and training of their algorithms, they partnered with medDARE for comprehensive medical data services.
The scope included:

- **Data Collection**: 100 prostate MRI cases, gathered from four different hospitals using four different MRI manufacturer brands.
- **Patient Data Included**: Age, height, weight, ethnicity, race, and clinical history (periods and biopsy results where available).
- **Annotation**: Each MRI case was annotated by two certified radiologists, each with more than seven years of professional experience. Both radiologists independently annotated the entire MRI volume to ensure quality, precision, and consistency.

KEY FINDINGS

During the project, medDARE identified the following findings:

- **Data Diversity**: The inclusion of MRIs from four different hospitals and manufacturers provided a broad, heterogeneous dataset, crucial for training AI algorithms.
- **High Annotation Consistency**: Double annotations by experienced radiologists significantly reduced variability, ensuring reliable ground truth data.
- **Rich Clinical Context**: Supplementary clinical data (age, height, weight, biopsy history) enhanced the dataset, enabling the client's software to correlate imaging with real-world clinical parameters.
- **Workflow Efficiency**: The collaborative process ensured rapid data delivery without compromising on quality.

SOLUTIONS

- medDARE designed and executed **a multi-site data collection strategy**, ensuring representation from multiple MRI vendors.
- Implemented **an efficient annotation workflow**, involving two independent, board-certified radiologists with extensive experience in prostate imaging.
- Delivered **a standardized dataset enriched with clinical metadata,** ready for direct integration into the client's AI development pipeline.

IMPACT

As a result, the following impact was made:

- **Improved Model Robustness**: The heterogeneous dataset allowed the client's AI models to train on a diverse population and imaging hardware.
- **Higher Diagnostic Accuracy**: Double annotations by senior radiologists provided accurate segmentation of prostate structures, directly enhancing the quality of the client's ground truth.
- **Accelerated Development Timeline**: medDARE's efficient project execution enabled the client to progress more rapidly toward clinical validation and deployment of their prostate cancer detection software.
- **Clinical Relevance**: Integration of imaging with clinical parameters ensured the dataset reflected real-world conditions, improving the AI model's utility for physicians and patients alike.

CONTACT US TO LEARN MORE ABOUT MEDDARE & HOW IT CAN TRANSFORM YOUR AI PROJECT

E-mail: contact@meddare.ai
Website: www.meddare.ai