



**MX Healthcare GmbH**

Max-Urich-Str. 3  
13355 Berlin  
Germany

## IGSTC PhD / PostDoc Industrial Fellowship (m/f/d)

Are you passionate about developing impactful applications of machine learning? Does the prospect of dealing with complex problems in an exciting domain interest you?

### **What we do**

Better breast cancer screening should be a universal offering to every woman in the world. Vara's AI-powered software platform, created with screening radiologists in Germany, mitigates much of the human subjectivity associated with reading mammography results and reduces the repetitive work screening physicians are routinely subjected to. We are making breast cancer screening more effective, more measurable, and more accessible for everyone, everywhere. By democratising access to early screening around the world, we deliver measurable impact backed by clinical evidence. We are partnering globally to deliver breast cancer screening where it is needed most.

As the first company from Europe's leading AI venture studio Merantix, Vara has grown since 2018 to become an international 30-member team. Our diverse team consists of highly motivated scientists, engineers, healthcare professionals, and entrepreneurs.

Further information can be found on our website: [www.vara.ai](http://www.vara.ai)

### **Project description**

You will work closely with the core machine learning team to conceptualise and implement evaluation methods to assess the robustness of high performance deep learning models for breast cancer detection in a real-world application. Fundamental questions are: *Are the models working as expected? What is causing a deviation and how can we mitigate it?*

You will get the opportunity to contribute to and shape the following themes around the safe deployment of AI models to diverse clinical environments:

MX Healthcare GmbH | Max-Urich-Str. 3, 13355 Berlin, Germany  
Registration Court: Amtsgericht Charlottenburg | Registration No.: HRB 198925 B  
Managing Directors: Jonas Muff, Stefan Bunk

**Pioneering AI-Driven Healthcare**

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- *Evaluation of model robustness*: Design, implement and test strategies to uncover weaknesses of our models by e.g. visualising features, performing counterfactual interventions, detecting shortcut learning, discovering and analysing potential biases.
- *Analysing distribution shifts*: Contribute to the categorisation of distribution shifts that occur in practice when deploying breast cancer detection models globally.
- *Improve model robustness*: Implement and test established methods for mitigating distribution shifts; increase model robustness based on specific insights from analysing distribution shifts and model weaknesses.

### **Your profile\***

- MSc or PhD in computer science, machine learning, or related technical field. Preferably with a background relevant to us.
- Experience with relevant technologies: machine learning frameworks (TensorFlow, PyTorch, ...), Python scientific computing stack (numpy, scipy, plotting libraries, statistical analysis), cloud infrastructure (GCP, AWS, ...), containerization (Docker or equivalent), version control (git, ...).
- You thrive in designing and writing clean code in an environment where research is very close to production.
- You have a rigorous and scientific approach to key challenges in machine learning.
- We appreciate a demonstrated ability to formalise and solve problems in a clean way using the most appropriate approach out of many possible ones. Simple problems should be kept simple, challenges appreciated as such. If a solution requires probabilistic programming, go for it.
- You want to learn about the medical domain to understand how to evaluate models such that they benefit the patient.
- You care about clear communication in the team.

\*Prospective candidates who wish to get a Letter of Consent while applying to IGSTC Industrial fellowships should apply with Vara if a substantial proportion of the above conditions resonate with you, not all of them have to be met. We strongly encourage individuals from groups traditionally underrepresented in tech to apply.

Kindly note that the skillsets required by Vara are over and above the eligibility criteria of IGSTC Industrial Fellowships. You still need to satisfy basic eligibility criteria of IGSTC Industrial Fellowships.

### **Contact details**

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