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To Whom it may Concern,

Re: "Senior Ultrasound Software Engineer"

I would like to have applied for the position of Senior Research Scientist for Interventional Medical Imaging, having seen the position advertised in LinkedIn. I believe I would have been a good technical fit for the role. I see the position is no longer advertised, but I would like to reach out despite this. This is the cover letter I had drafted for the role.

I am an applied mathematician by training, but have worked at the interface between academic research and industry for over ten years, in the United Kingdom and Germany, primarily in therapy and imaging with medical ultrasound but also in other clinical areas, such as ultra-low field MRI. I have used the mathematical skills to write performant, well-documented, tested, deployable code in both python and C++, compliant with both ISO 13485 and IEC 62304.

Within the job description, three specific areas are mentioned: segmentation, registration and reconstruction. I have a deep understanding of classical segmentation and reconstruction, and how, for ultrasound, a joint approach can yield accurate results. Through my professional experience, I am aware of the challenges of developing research code into part of a clinical solution, in terms of deployability, integration with hardware, testing, documentation, as well as the difficulty of developing real-time solutions in a clinical setting.

I have technical knowledge of ablation, having worked on commercial projects for microwave ablation, academic projects on radiofrequency ablation and therapeutic ultrasound.

I have deep knowledge of classical ultraound beamforming and image reconstruction, and have a good theoretical knowlegde of deep learning: I was a key figure in a team which was joint first place in the "Challenge on Ultrasound Beamforming with Deep Learning" competition in 2020.

I have worked with a company to improve signal quality for esopthagal doppler signal to monitor cardiac activity.

I am more familiar with jax, rather than pyTorch, but have a strong understanding of machine learning in general, as well as applied to ultrasound: I gave a invited lecture on the use of AI in therapeutic ultrasound at the most prestigious therapeutic ultrasound conference, ISTU, in 2023 and lecture graduate students on the mathematical foundations necessary to understand deep learning models.

I have permanent residency in Germany, living in Bremen, and speak conversational German. I am applying as there are structural changes at my current role which may reduce opportunities for development. I have spoken to people with deep knowledge of the company, who described the products as world-class. I am enthusiastic about this role as it creates tangible clinical impact in image-guided therapies. Please find enclosed my CV, and let me know if you require any additional information.

Yours faithfully,

David Sinden

Attached: curriculum vitae