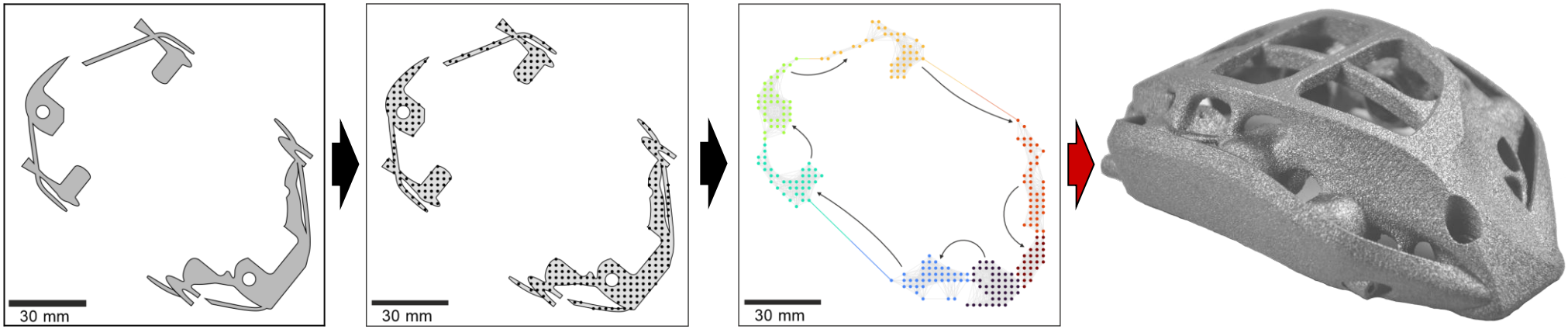
Bachelorarbeit or Master's Thesis

Topic: **Development of spot melting strategy in electron beam powder bed fusion**

Start: as soon as possible

Abstract: Traditionally, scanning strategies in electron beam powder bed fusion primarily relied on line melting. However, in recent years, spot melting has become increasingly popular due to its unmatched ability to precisely control energy input. Spot melting offers significant advantages, including reduced geometric restrictions and more uniform properties in manufactured parts. To truly capitalize on the benefits of spot melting, it's essential to develop advanced scanning strategies that transcend simple random point selection or fixed spot patterns.
These innovative strategies should first be validated through thermal simulations to ensure theoretical soundness. Following validation, it is crucial to test these strategies in practical experiments using real machines. This practical application not only assesses their effectiveness but also facilitates their integration into standard experimental procedures.
While having a basic knowledge of Python can be advantageous for the thesis, it is not a mandatory requirement.



Location: Erlangen

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