Maria Smigelska
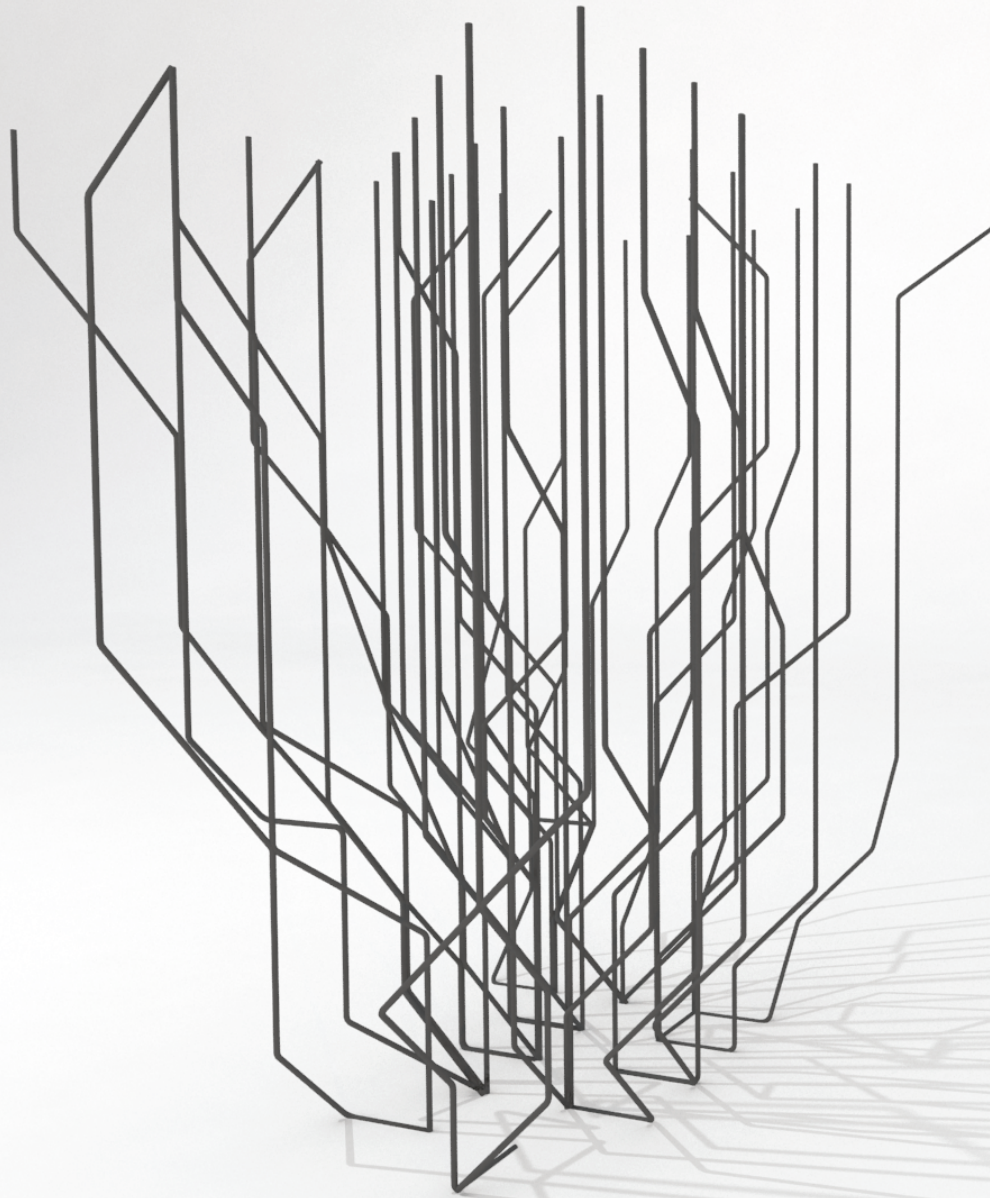
Robotic rod bending
machine learning applications in robotic fabrication

In this talk Maria will present her current research focused on development of robotic rod bending processes applied to product design and architecture. Her work aims to integrate machine learning algorithms in the production process in order to create simplified but versatile robotic automation for the prototypical building industry. Machine learning has the potential to augment human expertise and material knowledge within fabrication processes and as such it allows the architects to retrieve the influence on production of complex objects, reserved so far only for encapsulated industrial processes. Combined with commonly used digital design tools and simplified mechanics attached to robotic arm as well as allowing for information flow between each, it merges back design and making.

Maria Smigelska is an architect, designer and independent researcher. Before graduating from ETH CAAD, Zurich, she earned her master degree in architecture from Poznan University of Technology and have worked in various offices in Poznan and Warsaw. Since then balancing between research and the applied world and having strong interest in complex geometry, computational design and robotic fabrication, she tries to implement digital tools in projects of different scales.

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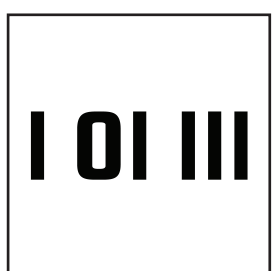
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