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Ecole Polytechnique

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***Computational imaging:
from physics-based modeling to statistical reconstruction***

Algorithms are now ubiquitous to reconstruct or analyze images. In the Biomedical Imaging Group at EPFL, we collaborate with experimentalists to provide algorithmic and theoretical support. In this presentation, I will present a few projects about the different steps in a computational imaging project.

- Physics-based modeling: high-NA PSF models and efficient Pytorch library
- Reconstruction: phase retrieval algorithms for quantitative phase imaging
- Analysis: shot-noise-limited precision bounds in localization microscopy.