

# **GENERATIVE MODELS FOR SOLVING INVERSE PROBLEMS**

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We show how a Generative Adversarial Network solves a few inverse problems, including the near-field phase retrieval problem, which is a non-linear ill-posed problem, and the Gaussian deconvolution problem. It does this without any ground truth data but by leveraging the Forward operator as a guide. We Discuss the model, performance under different conditions and how we use Uncertainty Quantification (UQ) to strengthen our confidence in the result, creating a bridge with the Bayesian Inverse problems, which are well-posed in structure. We then show promising results we have gotten so far.