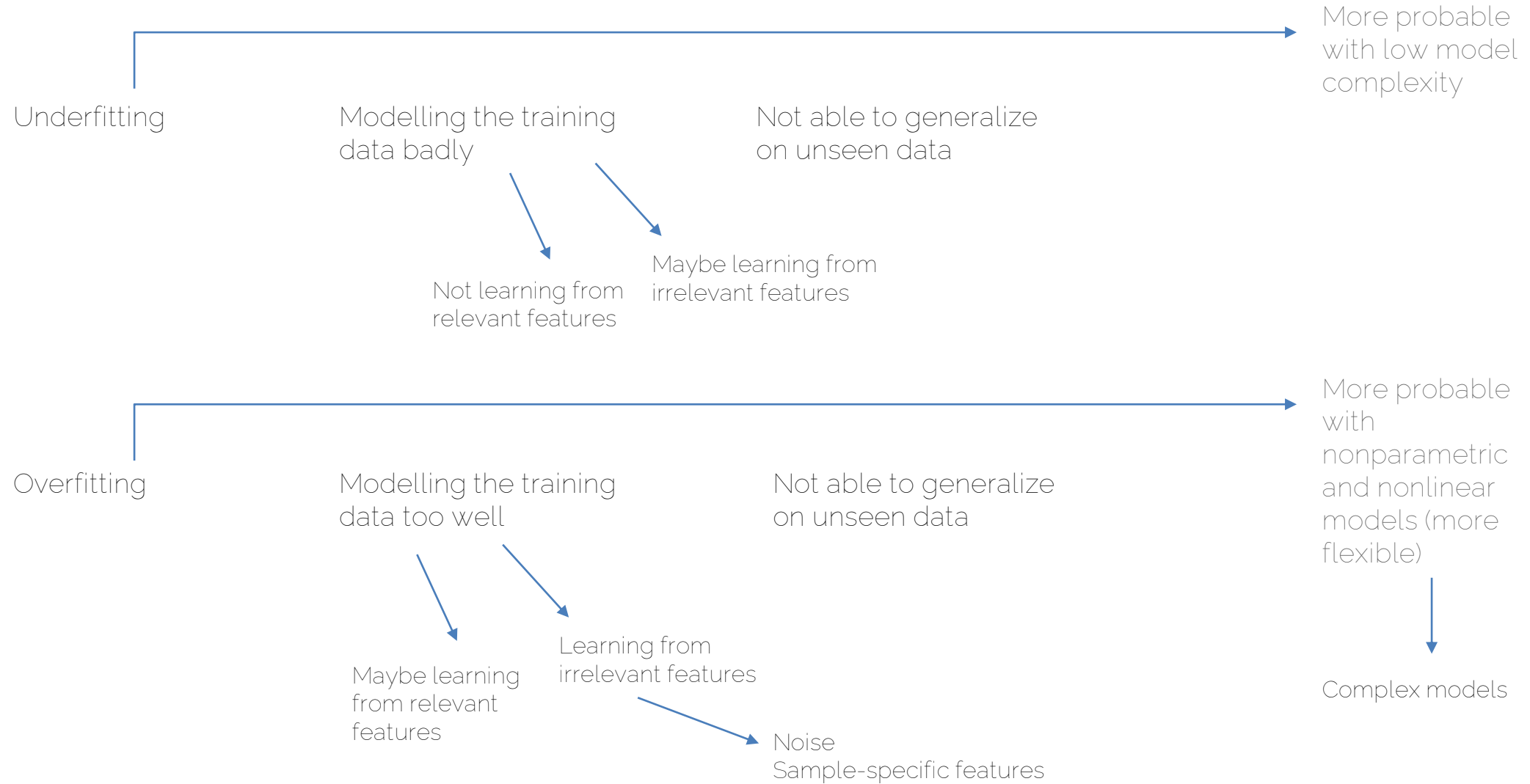


Underfitting / Overfitting

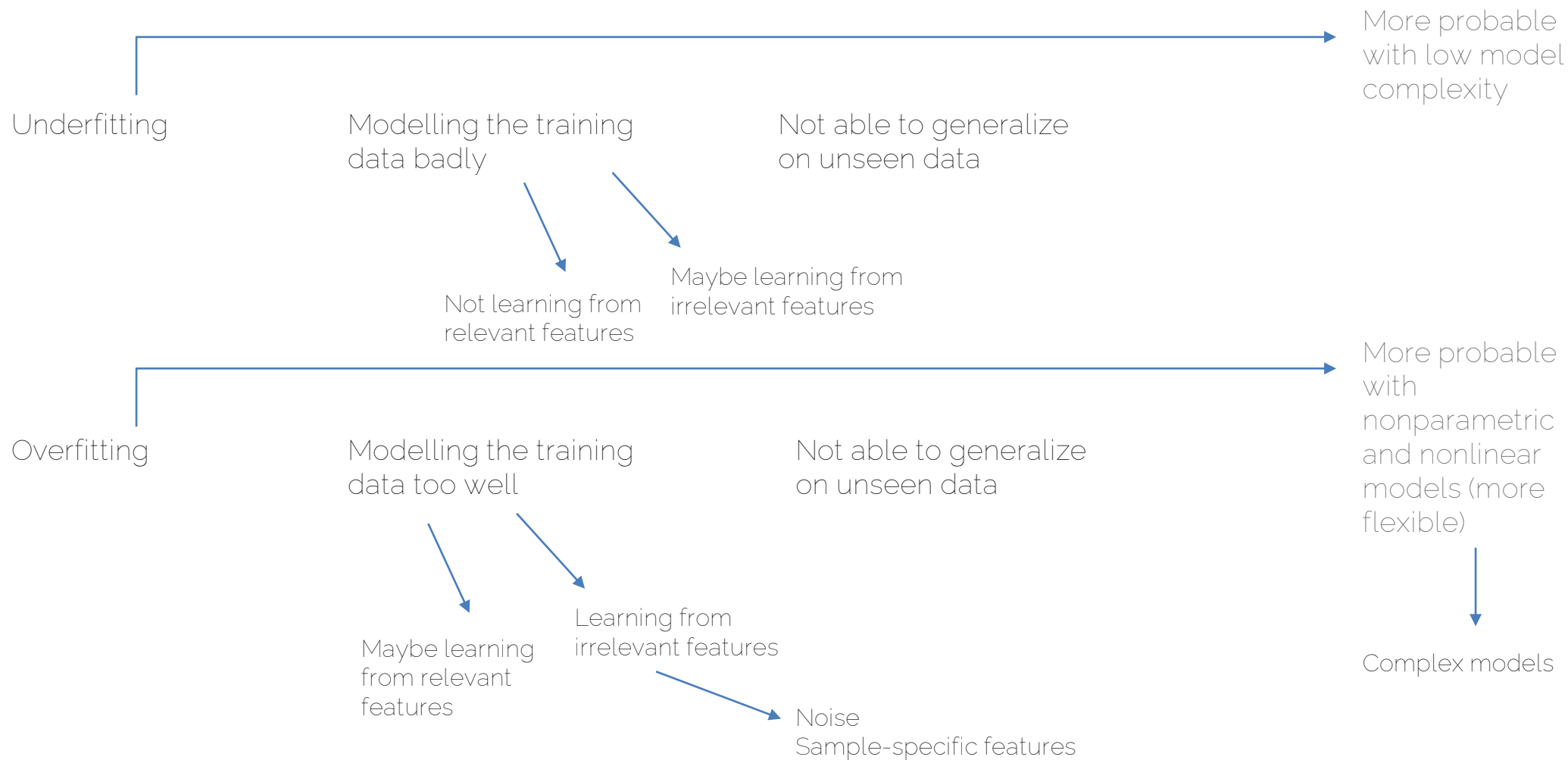
Christian Salvatore
Scuola Universitaria Superiore IUSS Pavia

UNDERFITTING / OVERFITTING

Underfitting / Overfitting

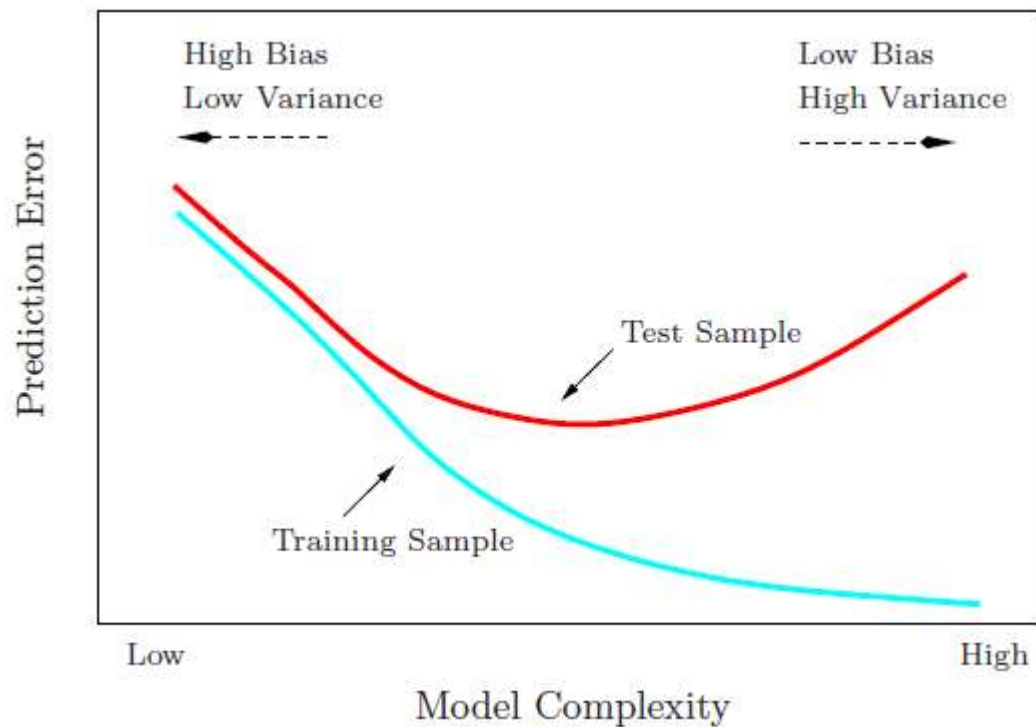


Underfitting / Overfitting



How to notice: validate and test your results

Underfitting / Overfitting



	Underfitting	Just right	Overfitting
Symptoms	<ul style="list-style-type: none"> • High training error • Training error close to test error • High bias 	<ul style="list-style-type: none"> • Training error slightly lower than test error 	<ul style="list-style-type: none"> • Very low training error • Training error much lower than test error • High variance
Regression illustration			
Classification illustration			
Deep learning illustration			
Possible remedies	<ul style="list-style-type: none"> • Complexify model • Add more features • Train longer 		<ul style="list-style-type: none"> • Perform regularization • Get more data