

Global Fusion of Relative Motions for Robust, Accurate and Scalable Structure from Motion

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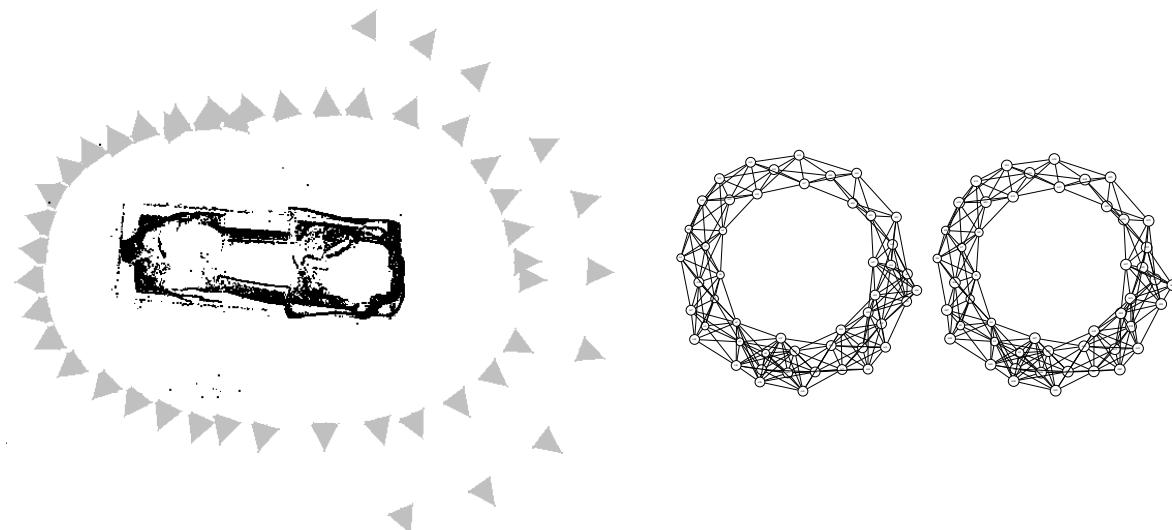
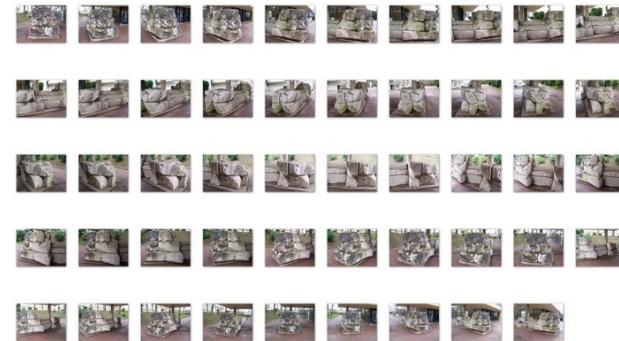
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This report presents experiments of our global Structure from Motion chain.

For each dataset are shown:

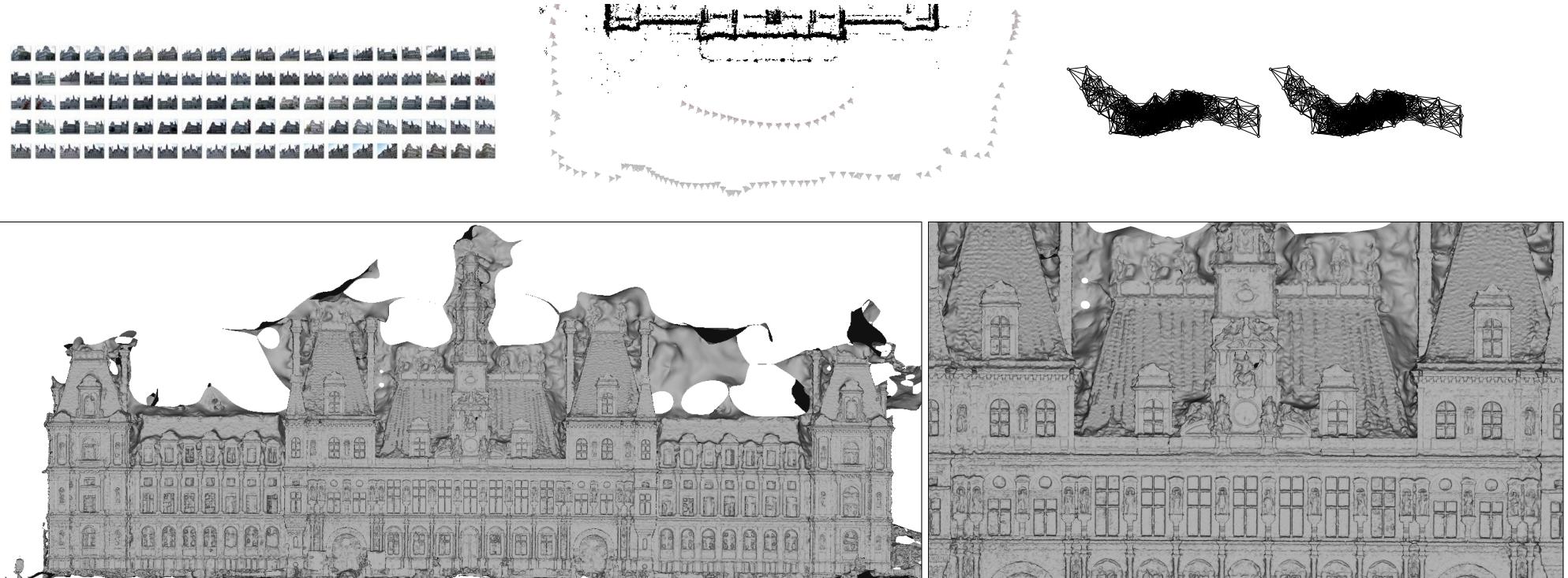
- the initial pictures,
- the calibration point cloud and camera positions (as small triangles),
- the initial visibility graph and the Bayesian rotation inference graph result,
- Pictures of the resulting dense mesh computed from our SfM process.
- Some statistics about the 3D reconstruction (Running times in seconds and re-projection errors eX_k (pixels) at the different steps).

MayaHeadP50

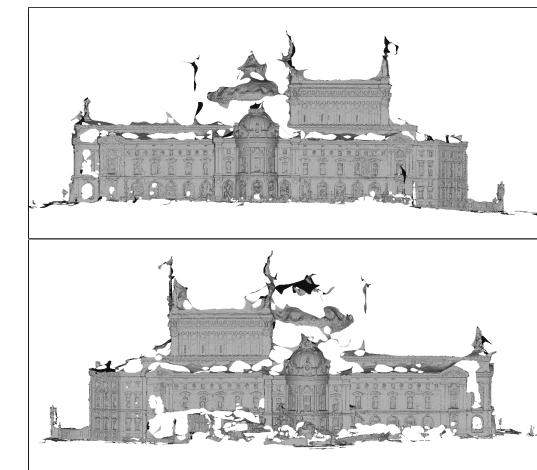
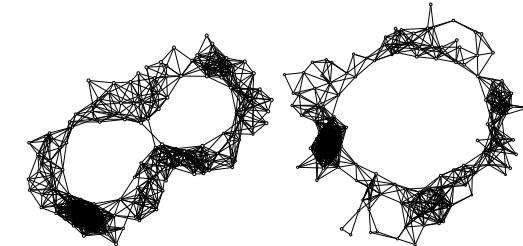
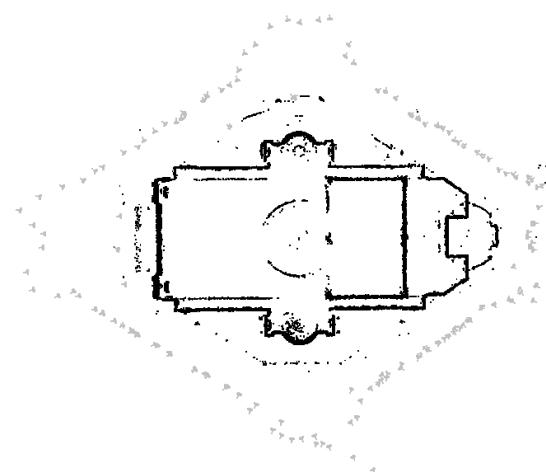
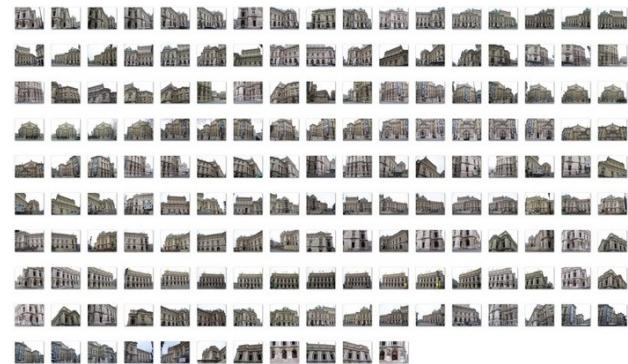


Dataset		Triplets			Translation registration				BA ₁		BA ₂		#3D points	Total
Name	#Images	#solved	#possible	time	# t_{ij}	time	γ	eX_k	#iter	eX_k	#iter	eX_k	#Tracks	time
MayaHead	50	149	402	10	447	2	1×10^{-3}	1.92	3	0.42	4	0.37	34960	41

HotelP100

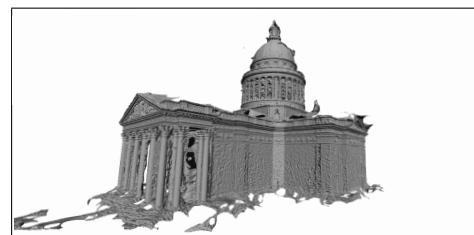
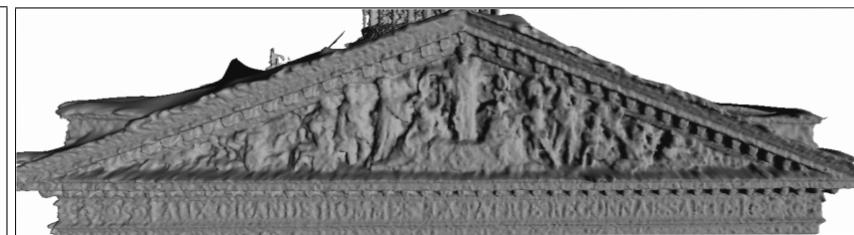
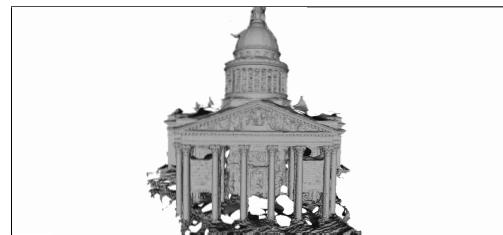
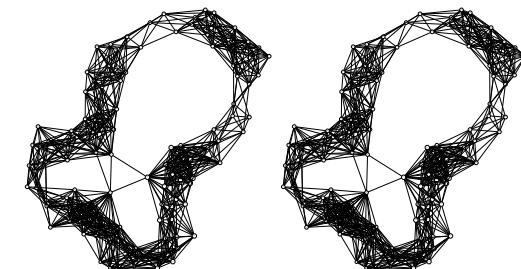
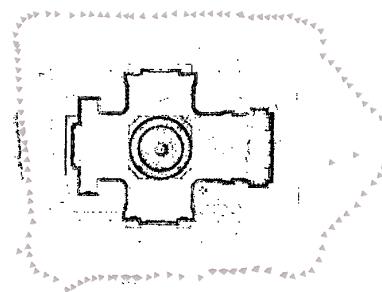


Dataset		Triplets			Translation registration				BA ₁		BA ₂		#3D points	Total
Name	#Images	#solved	#possible	time	# t_{ij}	time	γ	eX_k	#iter	eX_k	#iter	eX_k	#Tracks	time
Hotel	100	773	6655	57	2319	30	2×10^{-3}	1.98	3	0.59	4	0.51	56481	208



Dataset		Triplets			Translation registration				BA ₁		BA ₂		#3D points	Total
Name	#Images	#solved	#possible	time	# t_{ij}	time	γ	eX_k	#iter	eX_k	#iter	eX_k	#Tracks	time
Opera	160	588	3054	30	1764	41	1×10^{-2}	5.47	5	1.05	10	0.48	54261	207

PantheonP127



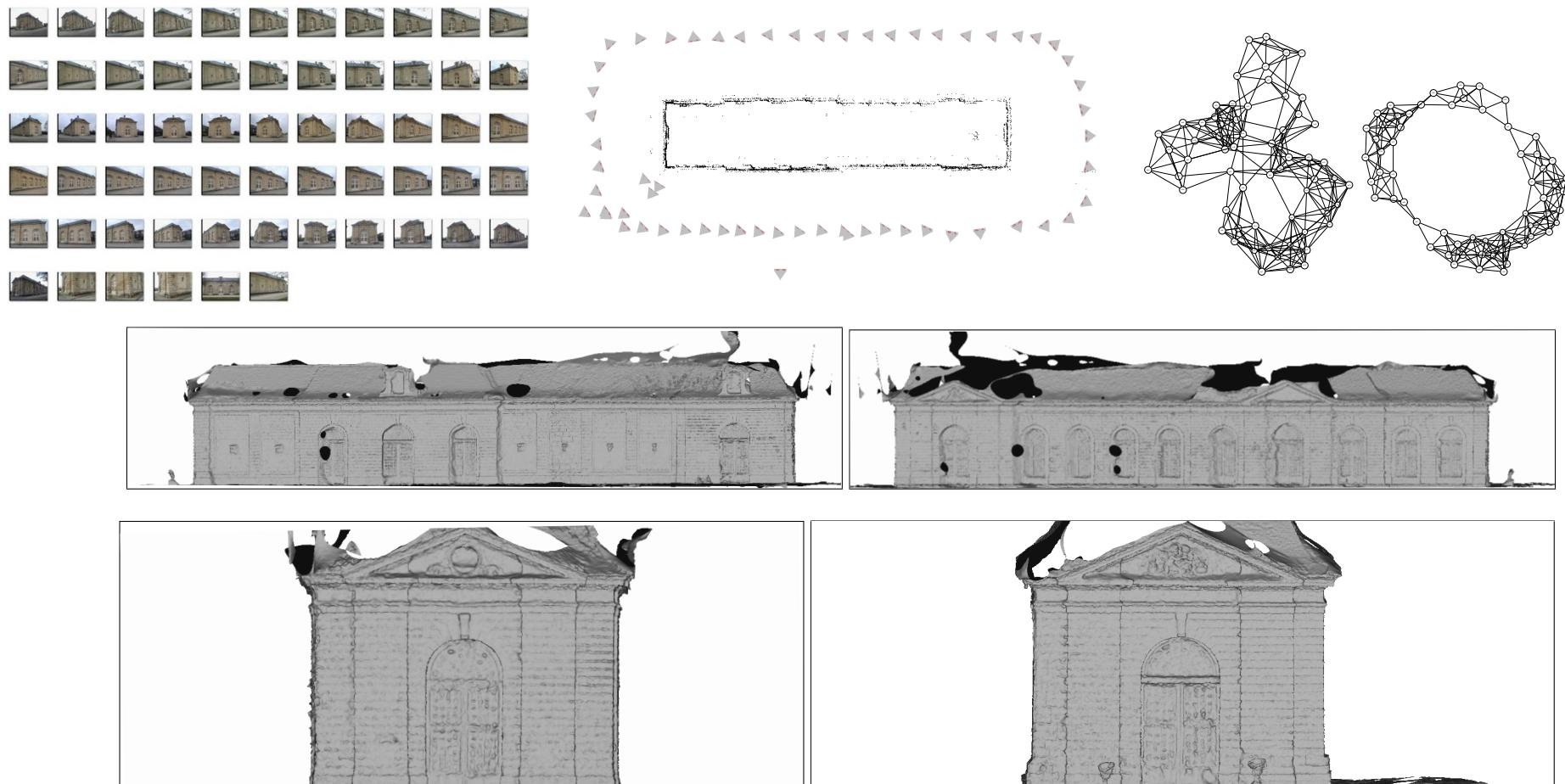
Dataset		Triplets			Translation registration				BA ₁		BA ₂		#3D points	Total
Name	#Images	#solved	#possible	time	# t_{ij}	time	γ	eX_k	#iter	eX_k	#iter	eX_k	#Tracks	time
Pantheon	127	582	3383	95	1746	25	5×10^{-2}	59.6	5	6.9	5	1.03	24252	189

ChurchP23



Dataset		Triplets			Translation registration				BA ₁		BA ₂		#3D points	Total
Name	#Images	#solved	#possible	time	# t_{ij}	time	γ	eX_k	#iter	eX_k	#iter	eX_k	#Tracks	time
ChurchP23	23	96	420	5	288	1	2×10^{-3}	1.77	6	0.43	6	0.43	8796	15

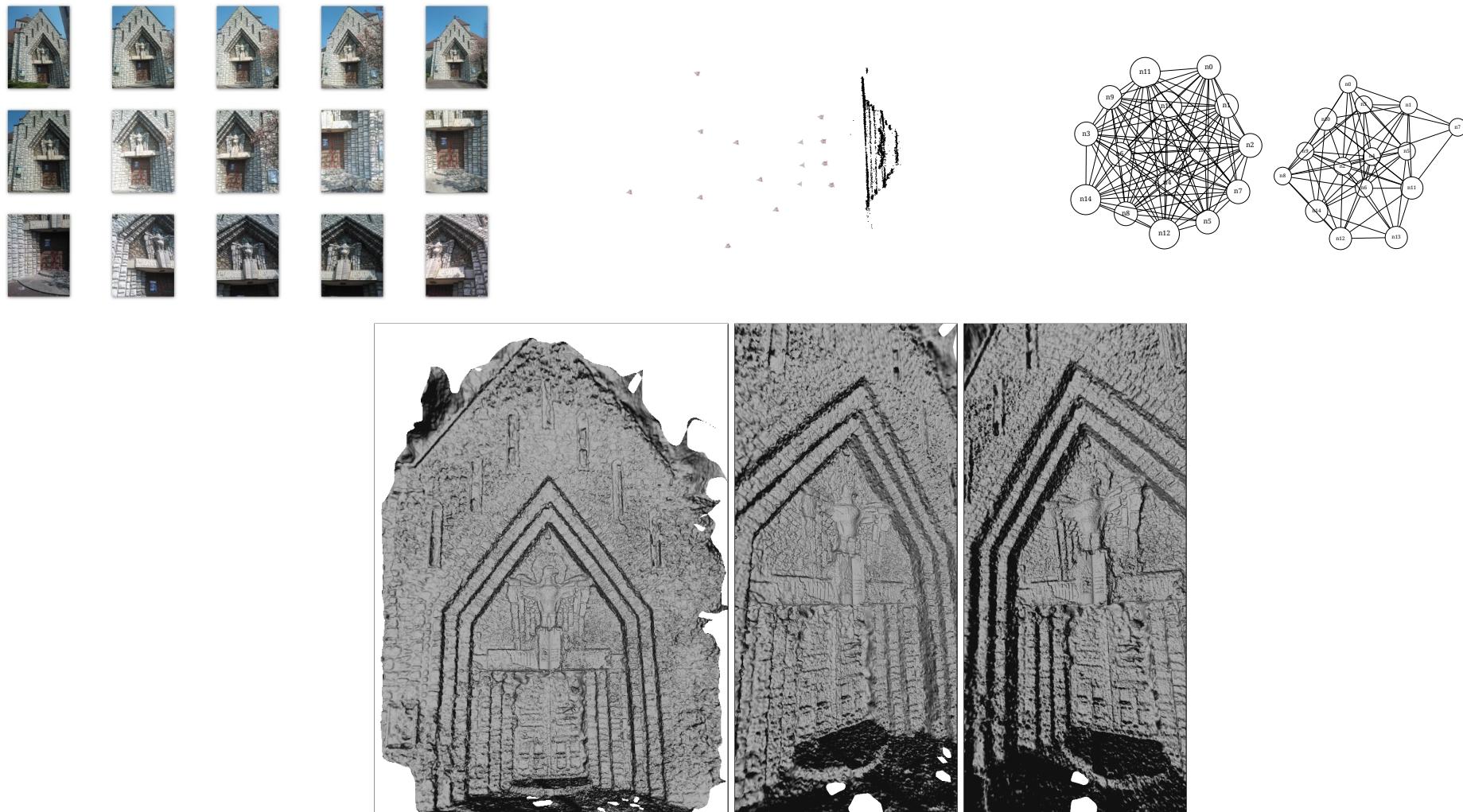
OrangerieP61



Dataset		Triplets				Translation registration				BA ₁		BA ₂		#3D points	Total
Name	#Images	#solved	#possible	time	# t_{ij}	time	γ	eX_k	#iter	eX_k	#iter	eX_k	#Tracks	time	
Orangerie	61	141	382	7	423	3	1×10^{-2}	8.09	5	1.0	7	0.57	7730	18	

Table 1: Mobile phone image dataset.

ChurchP15



Dataset		Triplets			Translation registration				BA ₁		BA ₂		#3D points	Total
Name	#Images	#solved	#possible	time	# t_{ij}	time	γ	eX_k	#iter	eX_k	#iter	eX_k	#Tracks	time
ChurchP15	15	46	142	9	138	< 1	2×10^{-2}	9.0	2	1.7	9	1.3	7111	19

Table 2: Mobile phone image dataset.