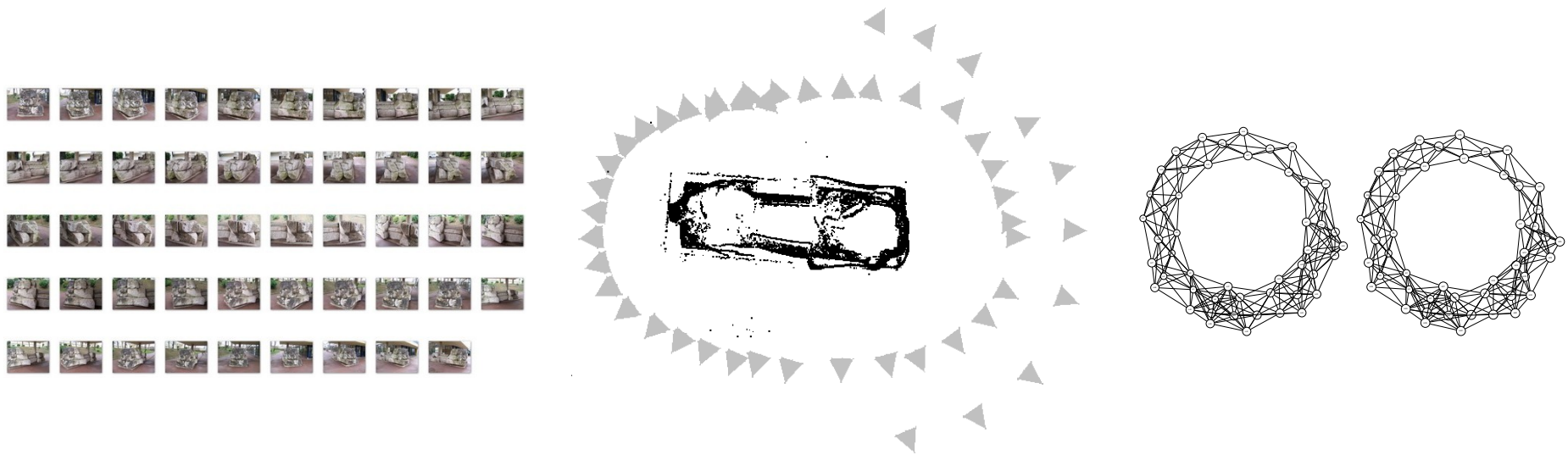


Global Fusion of Relative Motions  
for Robust, Accurate and Scalable Structure from Motion  
Pierre Moulon<sup>1,2</sup>, Pascal Monasse<sup>1</sup>, Renaud Marlet<sup>1</sup>  
<sup>1</sup>Université Paris-Est, LIGM (UMR CNRS), ENPC, F-77455 Marne-la-Vallée. <sup>2</sup>Mikros Image.  
`firstname.lastname@enpc.fr`

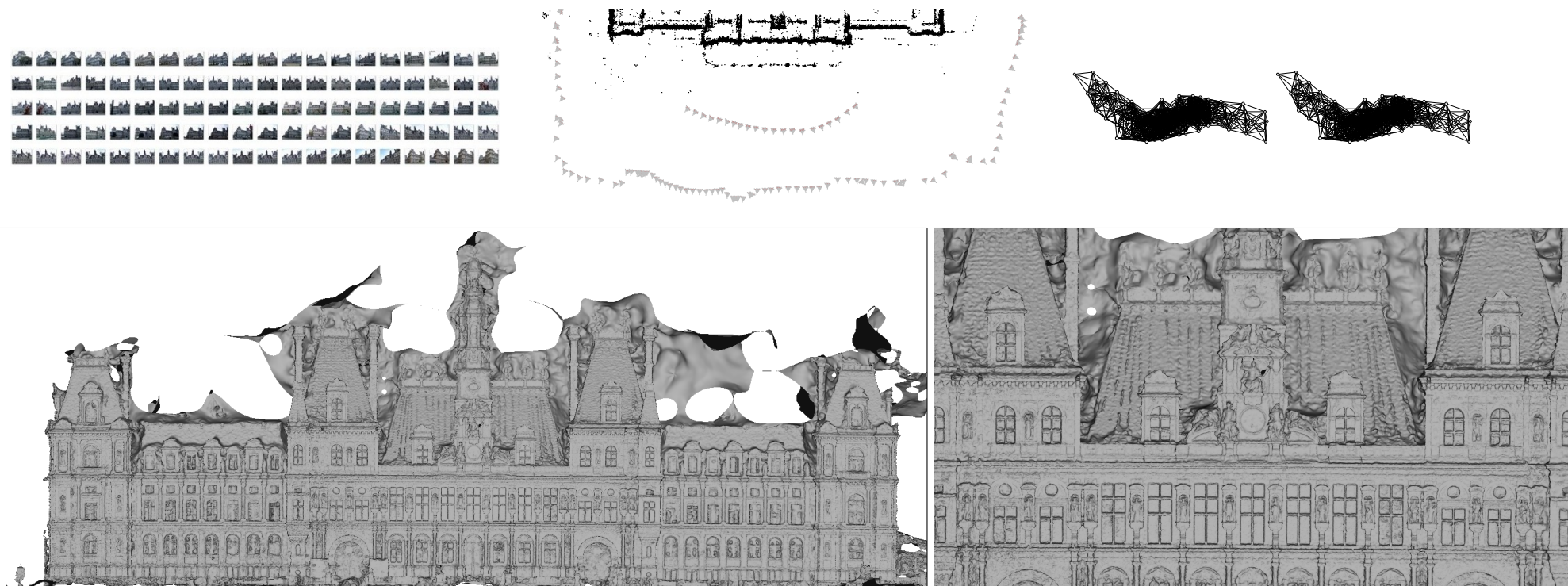
This supplementary material presents experiments of our global Structure from Motion chain.  
For each dataset are shown:

- 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 mean re-projection errors  $\bar{\rho}$  (pixels) at the different steps).

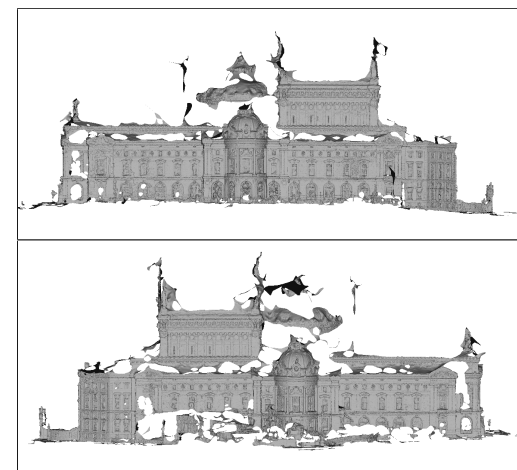
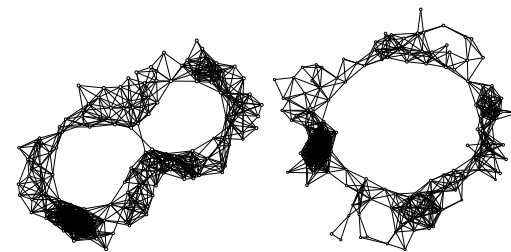
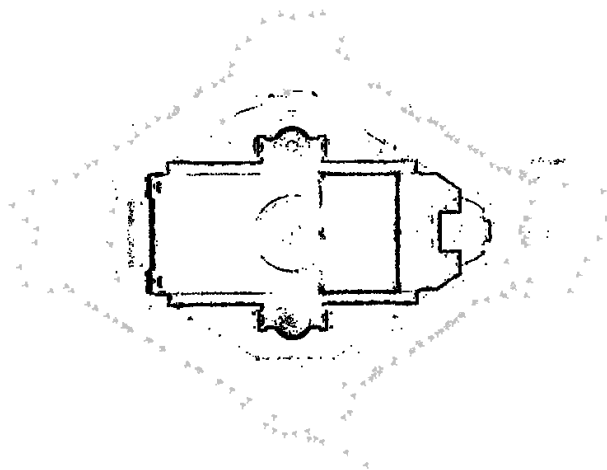
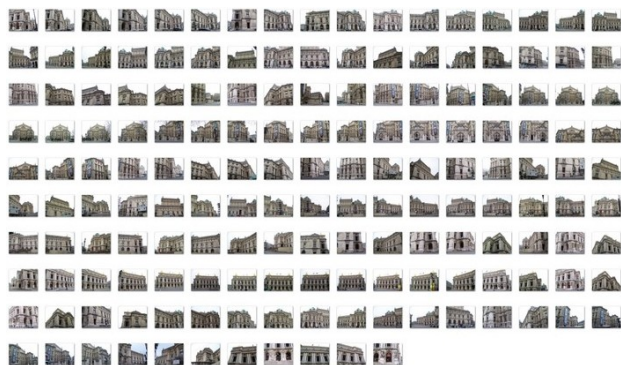


Dataset		Triplets			Translation registration				BA <sub>1</sub>		BA <sub>2</sub>		#3D points	Total
Name	#Images	#solved	#possible	time	# $t_{ij}$	time	$\gamma$	$\bar{\rho}$	#iter	$\bar{\rho}$	#iter	$\bar{\rho}$	#Tracks	time
MayaHead	50	149	402	10	447	2	$1 \times 10^{-3}$	1.92	3	0.42	4	0.37	34960	41

HotelP100

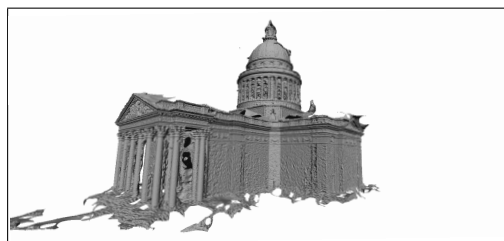
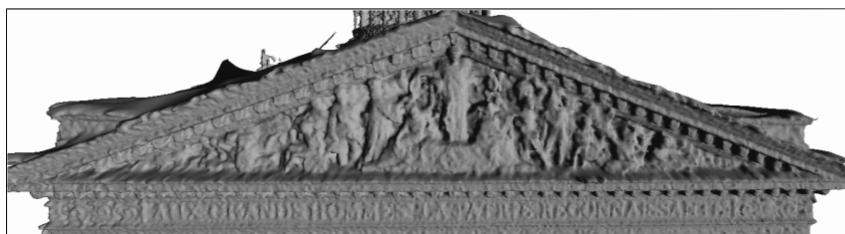
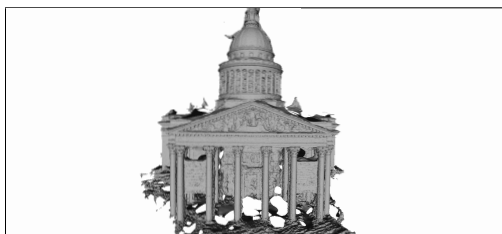
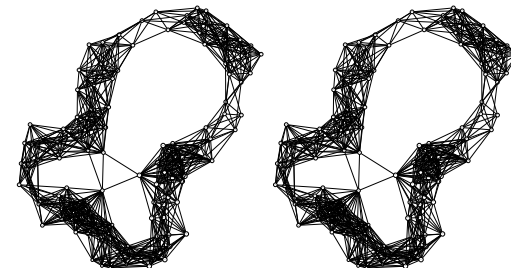
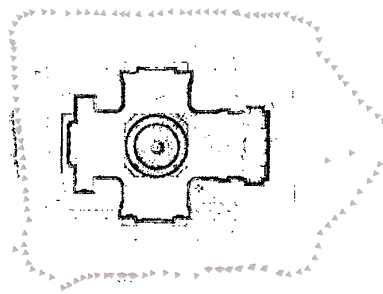


Dataset		Triplets			Translation registration				BA <sub>1</sub>		BA <sub>2</sub>		#3D points	Total
Name	#Images	#solved	#possible	time	# $t_{ij}$	time	$\gamma$	$\bar{\rho}$	#iter	$\bar{\rho}$	#iter	$\bar{\rho}$	#Tracks	time
Hotel	100	773	6655	57	2319	30	$2 \times 10^{-3}$	1.98	3	0.59	4	0.51	56481	208



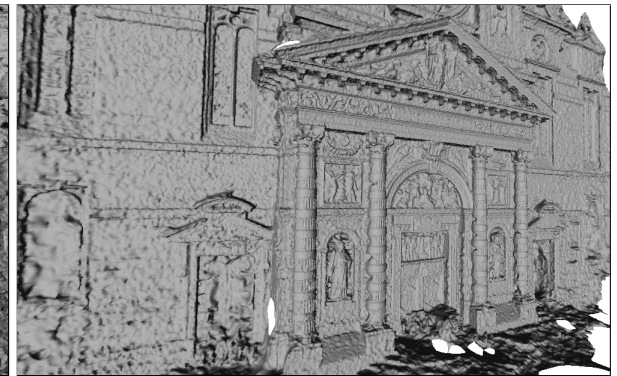
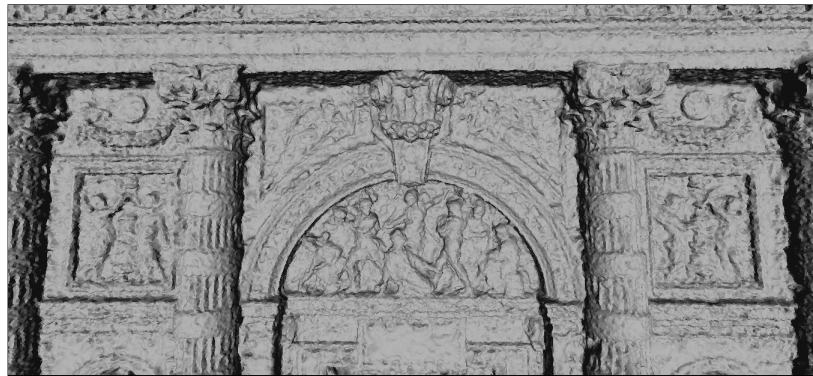
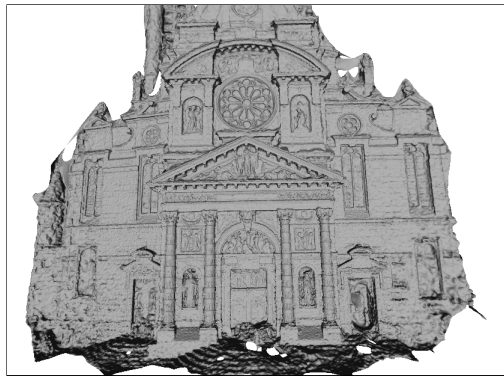
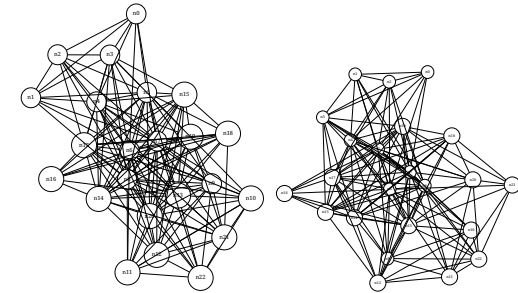
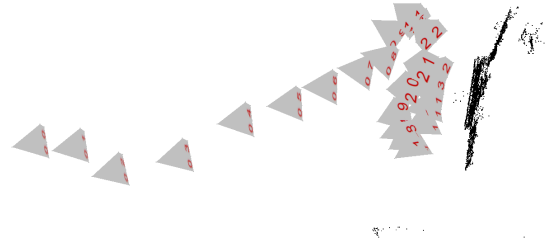
Dataset		Triplets			Translation registration				BA <sub>1</sub>		BA <sub>2</sub>		#3D points	Total
Name	#Images	#solved	#possible	time	# $t_{ij}$	time	$\gamma$	$\bar{\rho}$	#iter	$\bar{\rho}$	#iter	$\bar{\rho}$	#Tracks	time
Opera	160	588	3054	30	1764	41	$1 \times 10^{-2}$	5.47	5	1.05	10	0.48	54261	207





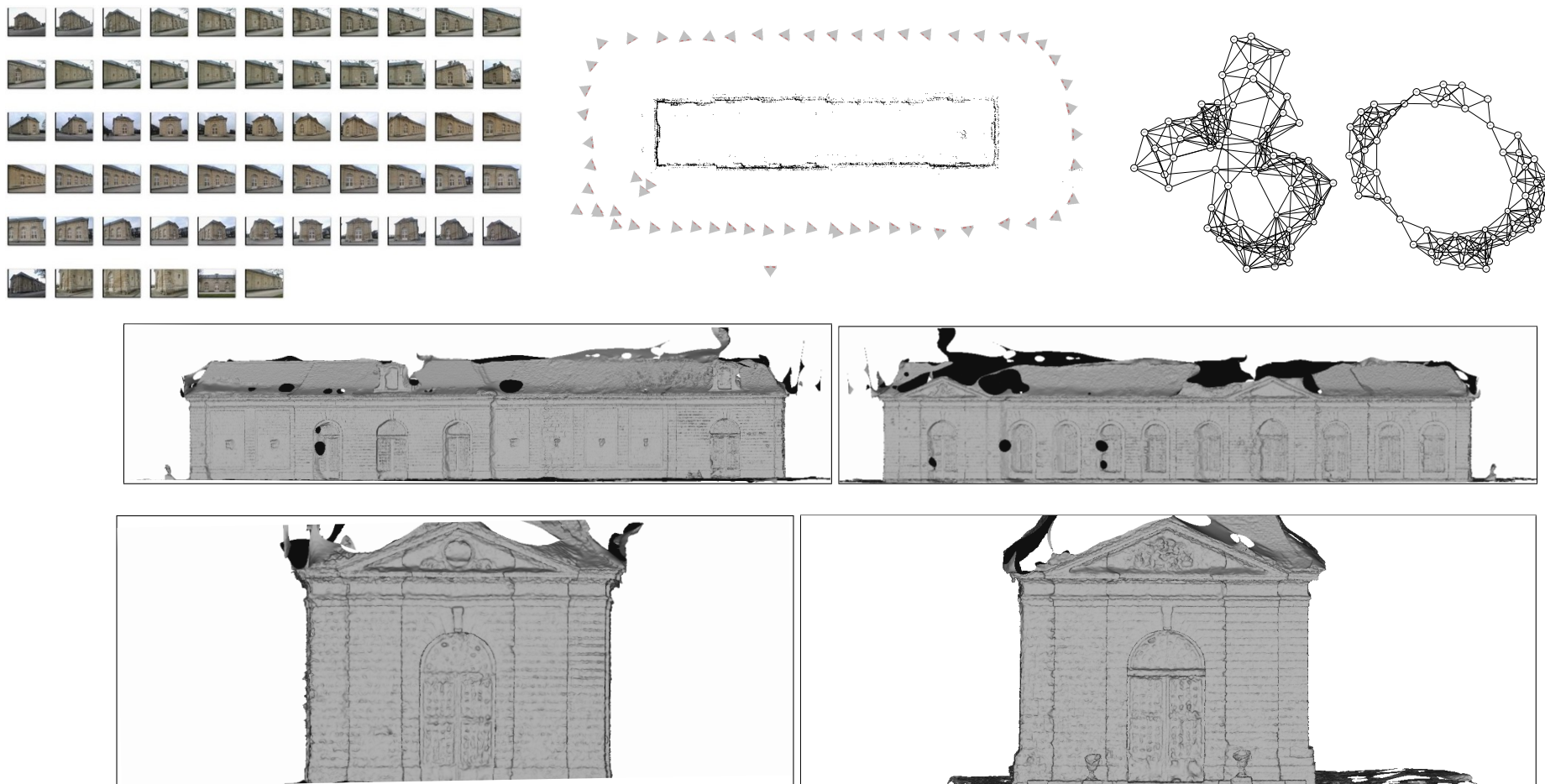
Dataset		Triplets			Translation registration				BA <sub>1</sub>		BA <sub>2</sub>		#3D points	Total
Name	#Images	#solved	#possible	time	# $t_{ij}$	time	$\gamma$	$\bar{\rho}$	#iter	$\bar{\rho}$	#iter	$\bar{\rho}$	#Tracks	time
Pantheon	127	582	3383	95	1746	25	$5 \times 10^{-2}$	59.6	5	6.9	5	1.03	24252	189

# ChurchP23



Dataset		Triplets			Translation registration				BA <sub>1</sub>		BA <sub>2</sub>		#3D points	Total
Name	#Images	#solved	#possible	time	# $t_{ij}$	time	$\gamma$	$\bar{\rho}$	#iter	$\bar{\rho}$	#iter	$\bar{\rho}$	#Tracks	time
ChurchP23	23	96	420	5	288	1	$2 \times 10^{-3}$	1.77	6	0.43	6	0.43	8796	15

# OrangerieP61

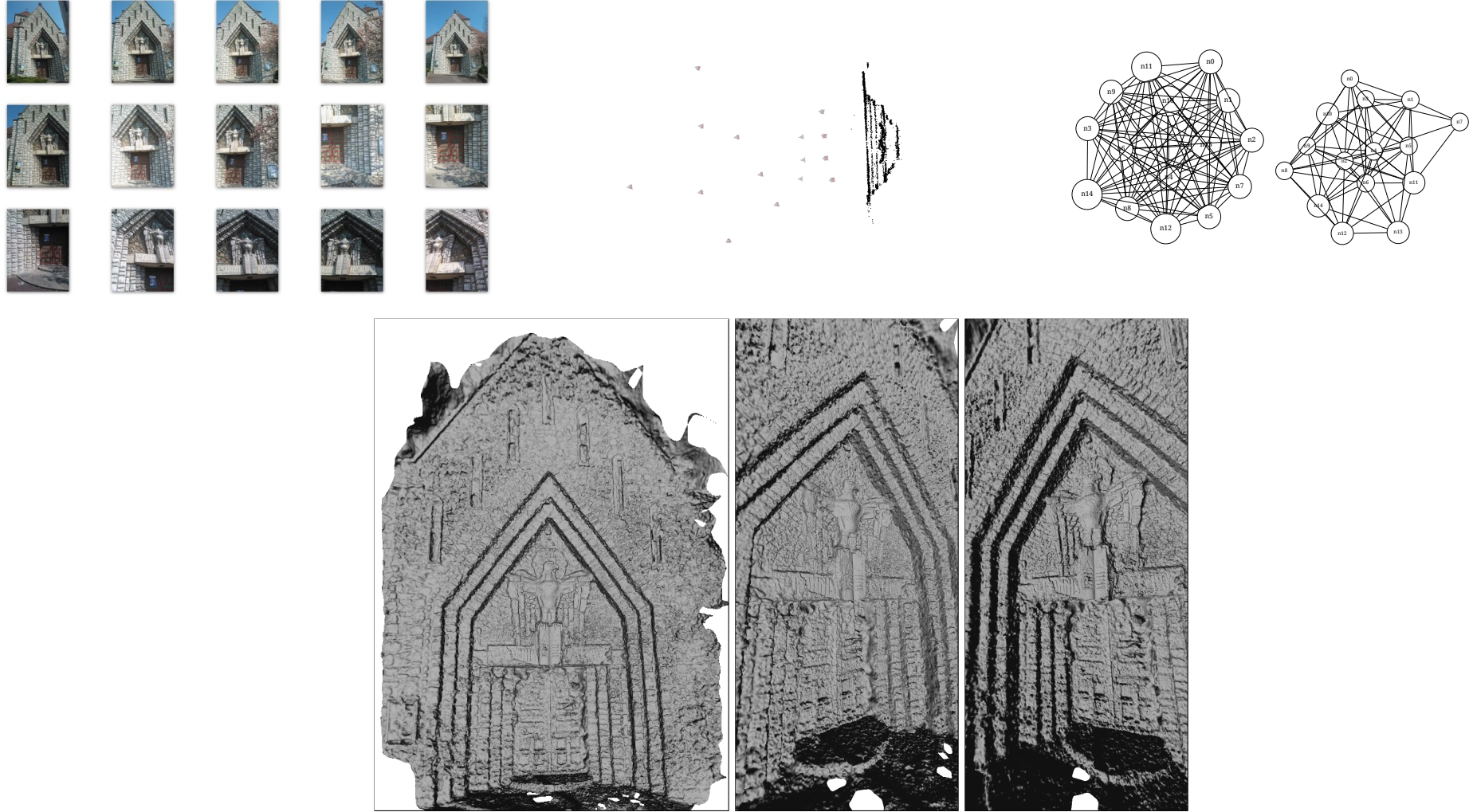


Dataset		Triplets			Translation registration				BA <sub>1</sub>		BA <sub>2</sub>		#3D points	Total
Name	#Images	#solved	#possible	time	# $t_{ij}$	time	$\gamma$	$\bar{\rho}$	#iter	$\bar{\rho}$	#iter	$\bar{\rho}$	#Tracks	time
Orangerie	61	141	382	7	423	3	$1 \times 10^{-2}$	8.09	5	1.0	7	0.57	7730	18

Table 1: Mobile phone image dataset.



# ChurchP15



Dataset		Triplets			Translation registration				BA <sub>1</sub>		BA <sub>2</sub>		#3D points	Total
Name	#Images	#solved	#possible	time	# $t_{ij}$	time	$\gamma$	$\bar{\rho}$	#iter	$\bar{\rho}$	#iter	$\bar{\rho}$	#Tracks	time
ChurchP15	15	46	142	9	138	< 1	$2 \times 10^{-2}$	9.0	2	1.7	9	1.3	7111	19

Table 2: Mobile phone image dataset.