

# Fitting Two Point Clouds From 3D Scans

Rodrigo Caye Daudt,  
Mr. Kaisar,  
Mr. Sepehr

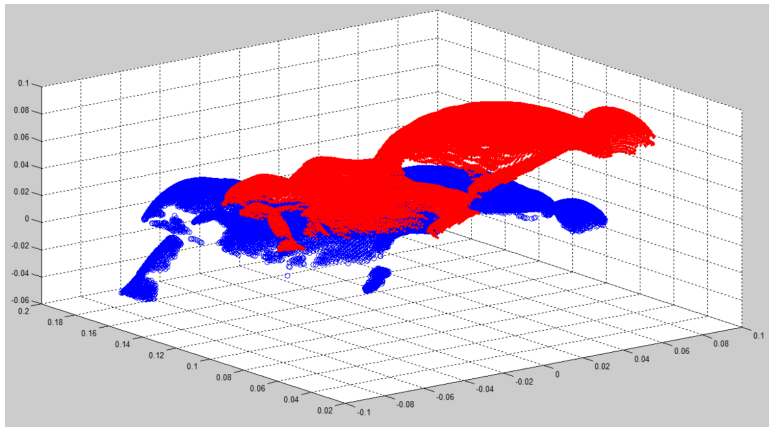
Université de Bourgogne

January 2016

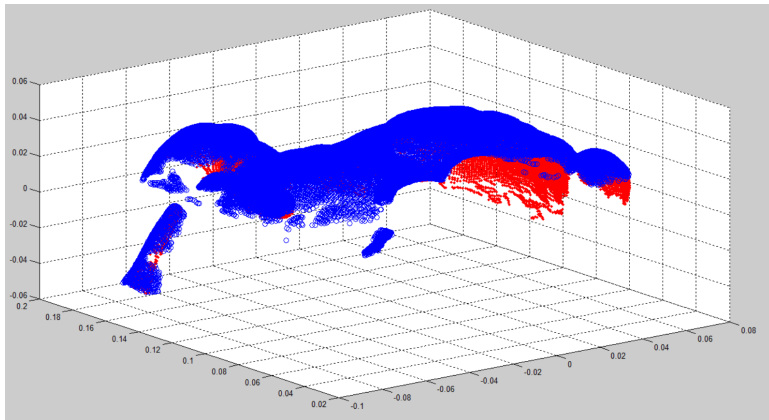
# ICP

```
1  $T \leftarrow T_0$ ;  
2 while not converged do  
3   for  $i \leftarrow 1$  to  $N$  do  
4      $m_i \leftarrow \text{FindClosestPointInA}(T \cdot b_i)$ ;  
5     if  $\|m_i - T \cdot b_i\| \leq d_{max}$  then  
6        $w_i \leftarrow 1$ ;  
7     else  
8        $w_i \leftarrow 0$ ;  
9     end  
10  end  
11   $T \leftarrow \underset{T}{\operatorname{argmin}} \left\{ \sum_i w_i \|T \cdot b_i - m_i\|^2 \right\}$ ;  
12 end
```

# Point clouds



# Point clouds after fitting



# Plot of error over iterations

