

INTERNSHIPS 2017

Océ Print Logic Technologies S.A.

1 rue Jean Lemoine, 94015 Créteil Cedex, FRANCE



A CANON COMPANY

Format de REF : 2017/S1/DIA/RSAPA/N°1

Subject: Development of a Pipeline for 3D Reconstruction Post-Processing

Océ PPP (A Canon Company) operates research centers in nine different countries worldwide, staffed by more than 1550 highly-skilled professionals.

Océ Print Logic Technologies (the R&D Center located in France) creates and develops, in collaboration with the other R&D centers around the world, innovative high-tech products in the fields of design, production (printers), reproduction (scanners, copiers) and document management (filing, reproduction workflow).

Description:

Reconstruction of 3D Objects is becoming ubiquitous given its importance for tasks such as reverse engineering, heritage preservation or quality control.

A usual camera-based 3D Reconstruction Pipeline consists of Calibrating the Acquisition System, Acquiring Multiple Images, Generating a Set of Point Clouds (one set per capture position), and Creating a 3D Model by post-processing the Point Clouds.

In this training, we assume that a set of Point Clouds corresponding to depth measurements captured at different camera positions has already been obtained. Thus, the objective is to develop the pipeline for post-processing the point clouds in order to obtain a final 3D Model. The sought pipeline would consist of the following steps: cleaning and stitching point clouds, building a mesh, adding texture (color), and output a standard 3D model format.

The internship will involve:

- Getting Acquainted with the Point Cloud Generation Method.
- An investigation on the state-of-the art of the methods available for each pipeline step.
- Implementing and Evaluating the Pipeline, using a diverse range of objects (included printed objects).
- Proposing improvements after a thorough analysis of the results obtained.

The trainee will be part of the research and innovation team.

Who are we looking for?

Required Knowledge:

- Experience with Computer Vision algorithms (3D Reconstruction knowledge is a plus)
- Programming Skills (C++ preferred, experience with Computer Vision Libraries is a plus)
- Fluent in English
- No experience with printing is necessary

Personal skills: Highly motivated, Analytical, Proactive

Internship information:

Duration: 4-6 months (to start as early as possible)

Remuneration: 1150€ per month; and a bonus at the end of the internship which could be up to 60% of the total gross remuneration received during the internship period.

Coverage of roundtrip Airplane/train tickets; and 60% subsidy of local commuting expenses
Partial subsidy of meals at the internal restaurant.

Localisation: 1 rue Jean Lemoine, 94015 Créteil
(7min walk from « **Le Vert de Maisons** » 2nd station of RER D from **Paris Gare de Lyon**)

Are you interested? Then please send your application including your CV and Motivation Letter to the following address ricardo.sapaico@oce.com and specify the reference **2017/S1/DIA/RSAPA/N°1**.