QIU Xuchong

Tel.：13554016839 | E-mail：QIU.Xuchong@outlook.com

Status：I am looking for a full-time job in Shanghai.

General Profile

I am a Ph.D. in computer vision, and I have more than four years of experience of developing (e.g., PyTorch) and improving computer vision algorithms (e.g., feature engineering, designing loss functions). Owing to the experience, I have in-depth knowledge of the data-driven methods and master each procedure of the deep learning method pipeline such as data acquisition (e.g., synthetic data generation) and quantitative/qualitative evaluation. Besides, I studied and worked in France during the last eight years so that I can communicate fluently with people in English/French.

Education

Ph.D. in Computer Vision, Ecole des Ponts ParisTech, Paris, France   **2016.10 – 2021.02**
- **Research topics：** 3D perception, object tracking, image segmentation, deep learning, artificial intelligence

Master's Degree in Robotics, Sorbonne University, Paris, France   **2014.09 – 2016.09**
- **Courses：** robotics, computer vision, automation, simulation

Bachelor's Degree in Mechanics, Claude Bernard University Lyon 1, Lyon, France   **2012.09 – 2014.06**

Bachelor's Degree in Physics, Wuhan University, Wuhan, China   **2010.09 – 2014.06**

Publications

2D and 3D Geometric Attributes Estimation in Images via Deep Learning   **2020**

Xuchong Qiu
- **Abstract:** The main goal of this thesis is to automatically detect 2D and 3D geometric attributes of objects and the environment. Particularly, we are interested in the low-level task of estimating occlusion relationship in single images and the high-level tasks of object visual tracking and object pose estimation.

Pixel-Pair Occlusion Relationship Map (P2ORM): Formulation, Inference & Application   **2020**

Xuchong Qiu, Yang Xiao, Chaohui Wang and Renaud Marlet. In: ECCV 2020 (Spotlight)
- **Abstract:** We formalize concepts around geometric occlusion in 2D images (i.e., ignoring semantics), and propose a novel unified formulation of both occlusion boundaries and occlusion orientations via a pixel-pair occlusion relationship. We also propose a new depth map refinement method by using the proposed occlusion formulation.

Pose From Shape: Deep Pose Estimation for Arbitrary 3D Objects   **2019**

Yang Xiao, Xuchong Qiu, Pierre-Alain Langois, Mathieu Aubry and Renaud Marlet. In BMVC 2019
- **Abstract:** We propose a completely generic deep pose estimation approach, which does not require the network to have been trained on relevant categories, nor objects in a category to have a canonical pose. We believe this is a crucial step to design robotic systems that can interact with new objects nor belong to a predefined category.

Experiences

Research Trainee, Institute for Intelligent Systems and Robotics, Paris, France   **2016.02 – 2016.08**
- **Goal：** Development of a robotic system which can simulate the motion/force of human hands when using tools.
- **Results：** A new real-time Position/Force hybrid control system which can work on a real 6-axis robotic arm; A method enabling simultaneous measurement of object 3D poses and forces.

Engineering Trainee, Wuhan Huazhong Numerical Control Co., Ltd, Chongqing, China   **2015.05 – 2015.08**
- **Goal:** Simulation of 6-axis robot arm dynamics and path planning.
- **Results:** A new simulation environment of robot dynamics; Softwares of robot off-line programming applied on assembly lines.

Competences

Language: English – Fluent, French – Fluent, Chinese – Mother language

Programming: Python, C/C++, Matlab   **OS:** Linux, Windows

Software: PyTorch, MXNet, OpenCV, OpenGL, Meshlab, Blender, ROS, SolidWorks, ADAMS, MS Office

Interest: High-tech, Photography, Social activities, Football, Ski, Chess, History, Art