Clément Godard

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Senior Research Engineer

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Research Interests

I am particularly interested in the intersection between 3D computer vision and deep learning, including single-frame depth prediction, multiview reconstruction, or image-based rendering. I also have an interest in computer graphics and virtual reality.

Publications

- **SimpleRecon: 3D Reconstruction Without 3D Convolutions**
  Mohamed Sayed, John Gibson, Jamie Watson, Victor Prisacariu, Michael Firman, and Clément Godard
  ECCV 2022
  https://arxiv.org/abs/2208.14743
  https://github.com/nianticlabs/simplerecon

- **Digging Into Self-Supervised Monocular Depth Estimation**
  Clément Godard, Oisin Mac Aodha, Michael Firman and Gabriel J. Brostow.
  ICCV 2019
  https://arxiv.org/abs/1806.01260
  https://github.com/nianticlabs/monodepth2

- **Deep Burst Denoising**
  Clément Godard, Kevin Matzen and Matt Uyttendaele.
  ECCV 2018
  https://arxiv.org/abs/1712.05790

- **Unsupervised Monocular Depth Estimation with Left-Right Consistency**
  Clément Godard, Oisin Mac Aodha and Gabriel J. Brostow.
  CVPR 2017 - Oral
  http://visual.cs.ucl.ac.uk/pubs/monodepth/

- **Multi-view Reconstruction of Highly Specular Surfaces in Uncontrolled Environments**
  Clément Godard, Peter Hedman, Wenbin Li and Gabriel J. Brostow.
  3DV 2015 - Oral
  http://visual.cs.ucl.ac.uk/pubs/shapefromreflections/

Patents

- **Self-Supervised Training of a Depth Estimation System**
  Clément Godard, Oisin Mac Aodha, Michael Firman and Gabriel J. Brostow. US20190356905A1. 2019.

- **Predicting Depth From Image Data Using a Statistical Model**
  Clément Godard, Oisin Mac Aodha and Gabriel J. Brostow. US20190213481A1. 2017.

Work Experience

Aug 2022-Now	**Google** – Senior Research Engineer Having fun with real time 3d reconstruction and neural rendering on Project Starline.
Nov 2020-Apr 22	**Niantic** – Senior Research Scientist Training and deployment of deep models at scale for use in mapping and localization, and development of SimpleRecon.
Jan 2019-Oct 20	**Skydio** – Research Engineer Embedded deep optical flow and depth estimation for an autonomous drone.

Jan-April 2018	**Niantic / Matrix Mill** – Research Contractor Developed monodepth 2, used in Niantic's Occlusion demo. `http://bitly.com/2yReRYt`
Summer 2017	**Facebook** – Research Intern Worked on deep learning based denoising of bursts photographs in Seattle
Summer 2016	**Google** – Software Engineering Intern VR/Jump team in Seattle
Years 2012-2018	**UCL** – Teaching assistant Machine Vision | Computational Photography and Capture
Summer 2011	**ArcelorMittal** – Engineering Research Intern Developed a computer vision method, now used in production, to detect and measure defects on steel coils.

Education

2012 – 2018	**PhD - UCL** (London, United Kingdom) – *University College London* EngD Virtual Environments, Imaging and Visualisation. Supervised by Gabriel J. Brostow. Worked on image-based 3D reconstruction and self-supervised learning of depth.
2011 – 2012	**MSc - UCL** (London, United Kingdom) – *University College London* MSc in Computer Graphics, Vision and Imaging - Awarded with Distinction Thesis: Automation of Stop-motion Animation Effects.
2009 – 2011	**MEng - Supélec** (Metz, France) – *Ecole Supérieure d'Electricité* Student in a leading Engineering School in the fields of electrical energy and information sciences
2006 – 2009	**Lycée Pothier** (Orléans, France) – *Classe préparatoire aux Grandes Ecoles* Core subjects : Physics, Mathematics and Engineering Sciences

Skills

Languages	Python, C/C++, CUDA, GLSL and Matlab
Technologies	PyTorch, Tensorflow/Keras, Caffe2, Torch, Numpy, OpenCV, OpenGL, WebGL, Eigen, Ceres Solver
Reviewer	CVPR, ICCV, ECCV, PAMI, IJCV, SIGGRAPH, SIGGRAPH Asia, BMVC, CVIU, TNNLS, IROS, ICLR