Nicolas Douillet

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PhD engineer
3D reconstruction, geometry
Image processing, data analysis

in /nicolas-douillet-a6793b142/

NicolasDouillet

⭐ Recommendations

✉ nicolas.douillet@free.fr

PRO & IT SKILLS

Image processing	Data analysis	3D reconstruction	Optimization	Photogrammetry	Simulation, modelling

C++/algorithm	Matlab	Python	Meshlab	Maple	MicMac	Latex

WORK EXERIENCE

2020

Mathworks : algebraic geometry. Mesh processing and mesh generation toolboxes. > 200 downloads.

Night Guide (start-up smartphone app) : extern consulting for technological project management and methodology.

2019

Youdome, Monaco : R&D engineer, responsible for the software development. Bodyscan, measures on 3D avatars.

2018

Nice regional education authority : math teacher. A level, science section. Lycée Carnot, Cannes.

2017

Mathworks : development for the file exchange community. > 60 contributions with doc and > 3k downloads.

Sculpteo : design, programming, and mesh of 3D printable mathematical surfaces : 3D printing project.

2013 - 2016

INRIA : R&D engineer

Galaad team : surface fitting with NURBS (3D reconstruction, splines). Development of a high precision technique for the fitting function. C++, Eigen and sdk libraries. European project Terrific. Collaborations : Missler software / Topsolid.

Titane team : surface reconstruction with mesh. Optimization and integration of a high precision meshing technique (scale space meshing). Photogrametry. C++, CGAL, Qt, Intell TBB libraries. European project Culture 3D Cloud. Collaborations : Geometry factory, CNRS Map, IGN, Telecom Sud Paris.

2012 - 2013

Cours Nicholas : self entrepreneurship : private tutoring in mathematics and physics.

2007 - 2011

CNRS-OCA : PhD. Simulation and data analysis for the space interferometer LISA. Modeling, inverse problem, parameter estimation, non convex optimization, signal and image processing. Award : best PhD poster. ESAIP Grasse engineer school physics teacher, 90h.

2006

CREATIS-LRMN (INSA-Lyon) : Msc project : echocardiographic images segmentation. Level sets / snake curves. Collaboration : CHU Bordeaux. Summer school math teacher, 40h.

2005

CREATIS-LRMN (INSA-Lyon) : engineer project. Dynamic imaging and tracking markers on videos for the study of tyre physics. Collaboration and practical application : Michelin.

EDUCATION

2006 - 2007	**INSA-Lyon** : master of science. Image processing. Movement detection, tomography, inverse problem.
2002 - 2006	**CPE Lyon** : engineer in image and signal processing/computer vision, optimization, programming, algorithm.
2000 - 2002	**College prep in superior mathematics** (Math-Sup / Spé) : two years full-time higher education in science, in preparation for competitive entry to 'grandes écoles' (french high-level schools of science).

LANGUAGES

French	Native speaker.
English	Fluent. FCE (First Certificate of Cambridge University)
German	Working knowledge.

OPERATIONAL SKILLS

- Design and implementation of mathematical and technical algorithms.

- Research, prototyping.

- Data analysis, parameter estimation, inverse problem.

- 3D reconstruction, geometry, photogrammetry (point clouds and meshes).

- Modelling, simulation, digital computation.

- Technical reporting, scientific communication and diffusion.

INTERESTS & PERSONAL RESEARCH PROJECTS

- 3D mesh reconstruction from convex hull 'divide and conquer' algorithm.

- 3D printable iterative meshed fractal objects. Fractal gallery. 3D printing shop.

- Geometric arithmetics (prime numbers set visualization, conjecture on twin primes).

- Autostereograms creation.

EXTRA CURRICULAR ACTIVITIES & INTERESTS

Teaching	Personal mathematics and physics teacher for high school and post baccalaureate pupils in science courses. Eight years experience with results and recommendations (2004-2013).
Scientific Diffusion	**SACA** (Société Astrophysique de Cannes). Conferences on gravitational wave detection (2009-2010) gif animation creation for Wikipedia. INRIA MASTIC.
Sports & Leisure	Reading, rock climbing (20y), slacklining (6y), game of Go (10y). Others : knowledge in aeronautics (PPL license holder). Mensa society member.