ANTOINE CHAN-LOCK, PHD

SIMULATION SCIENTIST

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SUMMARY

Computer scientist, Researcher with +8 years of diversified experience in coding, modelling and simulation within academia and industry. Leverages strong mathematical knowledge, and years of practice to solve state of the art problems.

PUBLICATIONS

Polar Interpolants fro Thin-Shell Microstructure Homogenization (2024)

Chan-Lock Antoine, Otaduy Miguel
SIGGRAPH Asia (Conference)
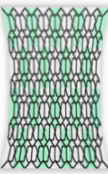
High-Order Elasticity Interpolants for Microstructure Simulation (2022)

Chan-Lock Antoine, Perez Jesus, Otaduy Miguel
CGF, Proc. of ACM SIGGRAPH/Eurographics SCA

CORE COMPETENCIES

- **Physically based animation**:
  Microstructures, soft bodies, Thin-Shells, FEM

- **Numerical methods**:
  Optimization, differentiable simulation

- **Data mining and modelling strategies**
  Data analysis, conceptualization, validation

- **Prototyping implementation**:
  Matlab, Python (numpy, scipy, autograd)

- **High performance implementation**:
  C++ (Eigen), Parallelization (OpenMP), JAX

- **3D modelling and rendering**: Blender

- **Web**: HTML, CSS, Django, Static generators

- **Languages**: French (native), English (fluent certified), Spanish (fluent certified)

REFERENCES

Miguel Otaduy, PhD supervisor (URJC)
miguel.otaduy@urjc.es

EXPERIENCE

Research intern, *June 2023 - Sept 2023*
CLO VIRTUAL FASHION

Simulation Researcher, *Apr 2019 - present*
MULTIMODAL SIMULATION LAB, MADRID, SPAIN

- *Mining physics-based data, analysing and modelling elastic behaviours of meta-materials*
- *State-of-the-art research and publication in international high-impact factor journals*
- *3D printing soft meta-materials for model validation*

Intern Simulation Engineer, *Jan-Mar 2017*
INOVERTIS, DONZERE, FRANCE

- *Heat transfer C++ simulation software development*
- *Automation of Eurocode (safety standards for structural design) in a Matlab app*

Misc

- *MSLab.es webmaster*
- *Teaching (FEM, Continuum mechanics, C++)*

EDUCATION

Universidad Rey Juan Carlos, *2019 - 2024*
PHD IN SIMULATION, MARDRID, SPAIN
Thesis title: Computational Homogenization of Thin-Shell Microstructures
Focusing on numerical coarsening methods for high efficiency elastic simulations, design of stable non linear elasticity models

UPC, *2018-2019*
ERASMUS EXCHANGE : INTERNATIONAL CENTRE FOR NUMERICAL METHODS IN ENGINEERING, BARCELONA, SPAIN
Concentration: advanced computation methods like meshfree, X-FEM, discontinuous Galerkin, phase fields, and NURBS methods.

SeaTech Engineering School, *2016-2019*
ADVANCED ENGINEERING MASTER DEGREE IN MODELLING AND SIMULATION, TOULON, FRANCE
Concentration: fluid mechanics, solid mechanics, numerical methods, FEM, structural engineering, CFD, continuum mechanics, non linear models

Université de Toulon, *2014-2016*
BCS, TOULON, FRANCE
Concentration: mathematics, physics, computer sciences