Tianyi LI

PhD, R&D engineer in multiphysics, numerical simulation and scientific computing

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EXPERIENCES

Research and Development Engineer — permanent (*CDI*)

Promold — *TPE* – consulting in simulation methods for plastics

Apr 2017 – — Paris 17e, FRANCE

- Multiscale rheological (fluid) and thermomechanical (solid) modeling of fiber-reinforced polymers: anisotropic viscosity, fiber orientation, structural buckling, porosity prediction and material failure behavior
- Code implementation under **Moldflow** for process simulation using **C++**, and under **Optistruct** / **code_aster** for structural analysis using **UMAT** / **Fortran**
- Uncertainty quantification and propagation for injection molding simulations using **OpenTURNS**
- Development of integrated simulation methodology between process (**Moldflow**, **Moldex3D**) and structural analysis; creation of dedicated GUI-based programs using **Python** / **C++**
- Development of scientific computing tools: procedure automation, pre and post-processing of data (**ParaView**), batch generation

Junior Research Engineer (PhD Candicate) — fixed term (*CDD*)

IMSIA (CNRS-EDF-CEA) — *PME* – applied research lab

Oct 2013 – Sep 2016 — Palaiseau (91), FRANCE

- Dynamic fracture modeling of brittle materials for concrete structures, with a novel non-local constitutive behavior
- Structural analysis, and code implementation in an industrial explicit dynamics finite element program **Europlexus** using **Fortran**
- Design and implementation of parallel computing architecture using **MPI** and **PETSc** under **Europlexus**
- Contributions to the open-source scientific computing libraries **FEniCS** and **PETSc** using **C++**

Numerical Simulation Engineer — fixed term (*CDD*)

Promold — *TPE* – consulting in simulation methods for plastics

Apr 2013 – Aug 2013 — Paris 17e, FRANCE

- Fiber orientation modeling for process (injection molding) simulation of fiber-reinforced polymers with **Moldflow**
- Integrative structural analysis under **Optistruct** and **Radioss** with process-induced microstructural properties using **Digimat**
- Automation scripting under **HyperWorks** using **Python** and **TCL**

Structural Analysis Engineer — intern

Faurecia Interior Systems — *GE* – automotive equipment supplier

Sep 2012 – Feb 2013 — Méru (60), FRANCE

- Elastoplastic constitutive modeling of long-fiber reinforced thermoplastics for the automobile industry
- Numerical analysis and code implementation using **Python**
- Static, modal and dynamic structural analysis under **Abaqus**

Mechanical Design Engineer — intern

AML-Systems — *PME* – automotive equipment supplier

Sep 2011 – Feb 2012 — Le Bourget (93), FRANCE

- Design and static analysis of headlamp cleaning systems using **Catia**
- Analysis of experimental data using **Matlab**

MOST PROUD OF

7 reviewed research articles
and more than 100 citations since

2 submitted patents at the INPI
with the kind support of our team

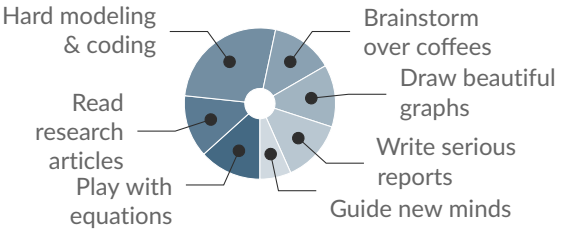
5 involved open-source projects
with software engineering (`git...`)

STRENGTHS

Efficiency | Curiositiy | *Polyvalence*

Mechanics background | Python | C++ | Fortran | CAD/Finite element software | Scientific and business communication

TYPICAL DAY AT WORK



LANGUAGES

Chinese ●●●●●

French / English ●●●●○

EDUCATION

PhD in Solid Mechanics

Univ. Paris-Saclay (Ecole Polytechnique)

2013 – 2016 — Palaiseau (91), FRANCE

- Supervisors: Jean-Jacques Marigo (l'X), Daniel Guilbaud (CEA) and Serguei Potapov (EDF)

Engineer in Mechanics

Univ. de Technologie de Compiègne

2010 – 2013 — Compiègne (60), FRANCE

Bachelor in Mechanics

Univ. de Technologie Sino-Européenne

2007 – 2010 — Shanghai, CHINA