

# TIANYI LI

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

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## EXPERIENCES

### Research and Development Engineer

**Promold**    TPE – consulting in simulation methods for plastics  
Apr 2017 –    Paris 17e, FRANCE

- Multiscale rheological and mechanical modeling of fiber-reinforced polymers: anisotropic viscosity, 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 **OpenURNS**
- Development of information transfer methodology between process and structural analysis; creation of a GUI-based toolbox using **Python**
- Development of business-oriented tools: procedure automation, pre and post-processing of data (**ParaView**), batch generation

### Junior Research Engineer (PhD Candidate)

**IMSIA**    PME – applied research lab between CNRS, CEA and EDF  
Oct 2013 – Sep 2016    Palaiseau (91), FRANCE

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

### Numerical Simulation Engineer

**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 **Digmat**
- 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**

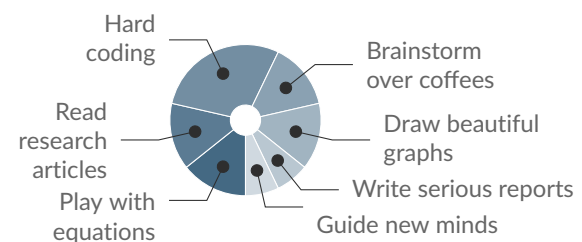
## MOST PROUD OF

- 7 reviewed research articles and  $\approx 100$  citations since
- 2 deposited patents at the INPI with the kind support of our team
- 5 involved open-source projects with positive feedbacks

## STRENGTHS

- Efficiency
- Curiosity
- Polyvalence
- Physics background
- CAD
- Python
- C++
- Fortran
- Machine learning
- 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

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