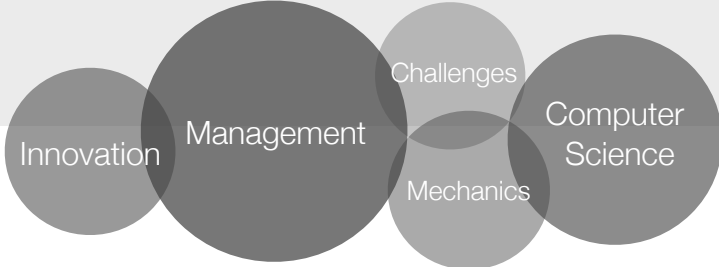




# FRANCIS PRADEL

Scientific, Technical and Digital Manager



## PROFILE

Scientific, Technical and Digital Manager  
 Team management on all phases of the design of products and services (from instruction to industrialisation)  
 Multi cultural environment  
 Reporting capacity in the context of complex projects.

## LANGUES

- French ● ● ● ● ●
- English ● ● ● ● ●
- Spanish ● ●

## CONTACT

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## EDUCATION

- 1996-1998 Ph.,D. Ecole Nationale des Ponts et Chaussées : Structures-Materials
- 1990-1994 Master of engineering from Ecole Nationale des Ponts et Chaussées
- 1987-1990 Preparatory school for French Grandes Ecoles, Lycée Louis Le Grand

## EXPERIENCES

### 2012-till now : IFP Energies Nouvelles, Project leader

- Head of structural R & D projects for **TECHNIPFMC** providing engineering and software solutions for flowlines, risers, umbilicals (Oil & Gas offshore technology )
- Automatisation of engineering and massive computing in the cloud ( cross providers : **AWS, AZURE, OVH**) for the design of wind turbines solutions.
- Assistance in funding of IFPEN spin off : **Drivequant** ([www.drivequant.com](http://www.drivequant.com))  
 connected service for mobility,  
 architecture, animation team with agile **SCRUM** method,  
 development of cartographic services,  
 development of a smartphone-server service for eco driving : Geco.
- Management of DeepLines Wind Development (wind turbine simulator).

### 2008-2012 : PREVIZNET, C.T.O., partner

- Technical management and architecture to build and run a SAAS platform in **Augmented Reality** applied in the Home Decoration field : Playviz.
- Agile lead of the technical team ( **SCRUM** method ) to implement web service and deployment on the internet.
- Product design with customer

### 1998-2008 : Institut Français du Pétrole, Project Manager

- Head of structural R & D projects for the oil and gas services company **TECHNIP** (France-England) in the field of offshore bottom surface connection structures (flexible, rigid and umbilical oil pipes);
- Technical management (testing, design, software), legal, financial and contractual programming of activities with its monitoring;
- Animation of a multidisciplinary team of 25 people (engineers, technicians, PhD students) in **Mechanics, Physics Chemistry, Applied Mathematics, Computer Science and Economics**
- Lead of a software development team for mechanical modeling of solids with **finite and discrete elements**: GRAINS 3D for refinery processes.

### 1992-1995 : PLASTIC OMNIUM (Belgique, France, USA)

- Production engineer (studies and tests) on the extrusion of fluorinated **thermoplastics**: PTFE (TEFLON) and copolymers.

## AWARDS

2008 OSEO contest  
and  
Tremplin Sénat-ESSEC

## TOOLS :

### OFFICE SUITE :

- Pack Office (Word, Excel, OneNote, Outlook)
- Macro in Visual Basic
- Use of ERP : Peoplesoft

## EXPERTISE FIELDS

- **18 years** experience in **Computer Science** (C++, Java, FORTRAN, Python).  
Development in the context of numerical mechanics of a discrete elements code (GRAINS3D) and a finite elements code (Abaqus for the integration of material constitutive laws).
- **14 years** experience in **project management** of various sizes (4 to 25 employees) and in particular international (Customer TechnipFMC (France-England-USA) over 6 years).  
Construction of multi-annual program in partnership with the client.  
Definition and application of strategies with the Business Unit.
- **10 years** experience in the **cloud** (AWS, OVH, AZURE) that can mix public cloud with dedicated servers.
  - Creation of monolithic solutions and solutions based on a micro-services architecture.
  - Automated deployment incorporating the autoscaling for massive engineering calculation solution (massive calculations for floating wind turbines design according to standards).
- **6 years** experience in the **development of multi-channel web solution** (website, mobile, device IoT) :
  - Including the creation and multi-platform deployment of a Web client augmented reality application (PLAYVIZ) including interactive photorealistic 3d visualisation. Solution deployed in SaaS mode for our customers (BUT, La Redoute,. Made in Design, Le Cèdre Rouge)
  - Integration in a product line of research and development results :
    - design of micro services deployed in container under Docker,
    - REST API architecture and Software integration in Java for eco-driving with an infrastructure that can handle up to 1 million of drivers, algorithms from R&D team working under Matlab.
  - Decoupling between R&D and production allowing, by automation, the acceleration of inlining R&D concepts.

## PROJECT MANAGEMENT SKILLS

- **Management** support and team recruitment of up to 25 people for international projects within an Institute of Research and Innovation.
- Construction of **commercial offers** and **invoicing**.
- **Budget monitoring and reporting** to customers and the Business Unit on multi-annual projects up to **2M€/year**.

## TOOLS :

### OS :

- Windows
- Mac OS X
- Linux :  
Debian, Ubuntu, Centos

### LANGUAGES :

C (OpenGL), C++, Python, Fortran,  
Java (Spring), PHP,,  
Javascript, CSS, HTML.

### DATABASE :

MySQL, PostgreSQL  
Mongodb  
ETL (Talend)

### DevOps Tools:

Virtualisation :  
Docker, AWS, Azure,  
Openstack, Virtualbox,  
Script :  
Ansible, Shell, Powershell  
Infrastructure as Code :  
Packer, Terraform, Vagrant  
Monitoring :  
Munin, Nagios,  
Collectd, Grafana

### SCIENTIFIC TOOLS :

Matlab, Maple  
Abaqus, Simulia (script  
Python, UMAT ...)  
Cmsol  
DeepLines Wind

### MACHINE LEARNING :

OpenCV  
Tensorflow, MXNet

## SCIENTIFIC AND TECHNICAL SKILLS

### COMPUTER SCIENCE :

- Computer development using Agile methods (SCRUM). Model-Driven Engineering skill (**MDE**); use of **UML, EMF, Acceleo**.
- **Definition and design of online solutions architecture** (software development and infrastructure) in the cloud according to the different layers **IaaS, PaaS, SaaS** when required.
- **Deployment and operation of dedicated server service solution architecture**, in the cloud and in hybrid mode mixing dedicated server and public cloud.
- Implementation of **secure and versioned deployment** (blue-green deployment, deployment automation and removal of deployment, intensive use of versioned images with **Docker** or **virtual machines**).
- Definition and implementation of redundancy strategies and data backup solutions to build **disaster recovery plans**.
- Implementation and build of **monitoring tools** for the **infrastructure** and the **software solution** (semantic probe monitoring).
- Construction, feedback and notification of **metrics** and **operational alerts**.
- Establishment of an escalation procedure for alerts and definition of the specifications for **outsourcing** of Level 1 and 2 incidents.

### DEVOPS :

- Development of **virtualised** and / or **containerised** solutions
- **Linux** system management (web server, file server).
- **Database** development and maintenance.
- Infrastructure and service **monitoring**, construction of specific probes and **dashboards**.

### MECHANICS :

- Expertise in **Mechanics** (solid and fluid). Mechanical design and dimensioning of structure and fatigue analysis.
- Expertise in **algorithmic**. Development of finite element and discrete element computing codes including spatio-temporal computation strategy algorithms.
- Expertise in **homogenisation**. Development of mechanical constitutive laws based on the consideration of the microstructure of materials as well as multi-physics coupling (diffusion, chemistry)
- **Teaching at Ecole des Ponts Paristech** and for Master at **Paris 6 University**.

### DATA SCIENCE :

- Development of **algorithms** and programming in **Computer Assisted Vision** and use of **Artificial Intelligence** platform.