FRANCIS PRADEL

Scientific, Technical and Digital Manager

Innovation · Management · Challenges · Mechanics · Computer Science

CONTACT

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PROFILE

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

LANGUES

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

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

EXPERIENCES

2018- till now : Fives Stein, head of software development and digitalization

- Development of **Process Control software** in the field of reheating and line steel furnace (**SCADA**)
- Development of **online design tools on the cloud** (AWS)
- **Supervision** and management of **12 engineers developing** control software and **commissioning** worldwide.

2012-2018 : IFP Energies Nouvelles, Project leader

- Design and deployment of a collaborative platform for Datascientist based upon Jupiter Lab with Kubernetes.
- Head of structural R & D projects (17 collaborators) for **TECHNIPFMC** providing **engineering** and **software** solutions for flowlines, risers, umbilicals (Oil & Gas offshore technology) on 2 locations (Paris-Lyon)
- Assistance in funding of IFPEN spin off : **Drivequant**
  connected service for mobility (**C** library development),
  architecture, animation team with **Agile SCRUM** method,
  development of cartographic services,
  development of an eco driving smartphone-server service): Geco.
- Management of DeepLines Wind Development (wind turbine simulator **C++**).

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.
- Architecture and development of **Computer Vision algorithm in C++**.to transform picture into 3D environment.
- **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);
- **X-ray testing** with CEA and **Computer Vision development** for 3D rebuilding of flexible pipe while mechanically under load.
- Technical management (testing, design, software), legal, financial and contractual programming of activities with its monitoring;

EXPERTISE FIELDS

- **22 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).

  - Development of computer assisted vision algorithm in C++.

- **28 years** experience in **Mechanics engineering** for structural analysis and process design with **solid-fluid** coupling and multi-physics modeling **(Chemistry and thermal analysis)**

- **18 years** experience in **project management** of various sizes (4 to 25 employees) on multi sites and worldwide international (China, England, France, Germany, India, Italy, USA).

  - Construction of multi-annual program in partnership with the client.

  - Definition and application of strategies with the Business Unit.

- **13 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.

- **13 years** experience in the **development of multi-channel web solution** (website, mobile, device IoT) :

  - 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, algorithms from R&D team working under Matlab.

  - Decoupling between R&D and production allowing, by automation, the acceleration of inlining R&D concepts.

- **4 years** experience in numerical **thermal** development of r**eal-time Process Control** for steel makers.

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, sourcing and reporting** to customers and the Business Unit.

SCIENTIFIC AND TECHNICAL SKILLS

COMPUTER SCIENCE :
- Strong developer skill with **C++, Java**
- 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 **virtualized** and / or **containerized** 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 Computer Vision algorithm. 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.