

# Nithyaraaj KUGALUR PALANISAMY

R&D Product development and Manufacturing Engineer

**SUMMARY & OBJECTIVE**

Results-driven Product Engineer with a focus on Manufacturing Product Integration, equipped with a background in mechanical engineering and AI development. Seeking a challenging position where I can leverage my expertise in optimizing product manufacturing processes, collaborating with cross-functional teams, and driving continuous improvement initiatives to enhance product quality and efficiency.

**WORK EXPERIENCE**

CONTACTS



**Data Scientist 01/2024 - Present**

**BeCode Brussels, Belgium.**

“Seeking to leverage expertise in manufacturing process and optimization to explore potential advancements in the realm of machine learning within the Industrial Metaverse.”

* Developed machine learning algorithms tailored for optimizing manufacturing processes, including predictive maintenance models to minimize downtime and improve equipment reliability.
* Analyzed real-time manufacturing data to derive actionable business insights, facilitating data-driven decision-making and process optimization.

**Researcher 04/2018– 09/2022**

**Machine Design and Production Engineering Lab.**

* Led development of AI tool integrating Finite Element and Machine Learning optimization algorithms to streamline manufacturing and operation processes for enhanced efficiency.
* Developed highly non-linear thermo-mechanical FE model through design optimization techniques.
* Conducted detailed analysis of complex manufacturing data using Python and statistical methods, employing advanced data visualization techniques to drive actionable insights for process optimization.
* Developed cutting-edge machine learning algorithms, incorporating Bayesian approaches, to address optimization challenges for digital twins and manufacturing integration.
* Engineered workflow automation solutions using parallel computing techniques, reducing computation by 60% and analysis time by 70% on a single machine.
* Improved manufacturing process efficiency through numerical model optimization and AI technologies.

**Product Manager 06/2016 - 03/2018**

**Agni Steels Pvt. Ltd. – India.**

* Led design optimization initiatives, achieving a 60% enhancement in product quality and efficiency.
* Conducted precise calculations and verified steel product functionalities.
* Managed multiple projects, producing specific test results and supporting design optimization endeavors.
* Provided engineering support, resolving technical issues, overseeing document control, and acting as an industrial coordinator for allied industries.

**Researcher** **09/2015 - 03/2016**  
**Centre for Material Forming (CEMEF), Sophia Antipolis, France.**

* Investigated and analyzed the industrial rolling process of steel to enhance product quality and efficiency.
* Utilized Finite Element modeling approach under microscopic simulations to predict damage in FeTiB2 during the rolling process, validated with experimental references.

## **R&D Intern 03/2015 - 09/2015**

### **MICHELIN, Research Development, and Industrialization**

## Investigated composite material manufacturing methods and analyzed their impact on composite failure through numerical modeling and experimentation.

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EDUCATION

**Data Science**

Bruxelles Formation, Belgium

2023

**PhD in Mechanical Engineering**

Faculty of Engineering - UMons, Belgium

2022

**M.Sc. in Applied Mechanics**

Ecole Centrale De Nantes, France

2015

STRENGTHS & SKILLS

* Solution oriented
* Fast learner
* Innovative
* Analytical & critical thinking,
* Leadership & Project management
* Product Design & Development
* FMEA
* Numerical Modeling (FEA, CFD)
* Manufacturing
* Data science (AI, ML, AWS)
* Statistical Analysis

management

Tools

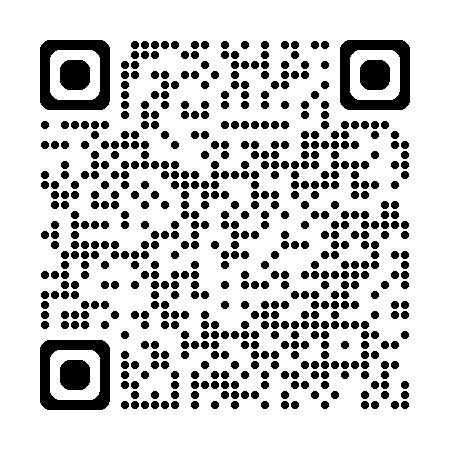
* CAD, CATIA, SOLIDWORKS, CREO, Siemens NX
* ABAQUS, ANSYS - LS-DYNA, Additive suit, COMSOL, OptiStruct, Simcenter
* FORTRAN, VBA, MATLAB, PYTHON,

C++, SQL, Power BI

LANGUAGES



* English - Fluent
* French – Intermediate



Thank you for visiting my LinkedIn profile to see more about my experiences, achievements