

Dr. Tom DE GEUS



PROFILE

Dedicated and innovative **scientist** with a passion for tackling **complex problems** through creative **interdisciplinary** solutions. Disposing of extensive experience in **mechanics, physics, materials, and mathematics & programming**. Excelling at identifying the core of problems, enabling fundamental solutions.

Project management: budget & prioritization, resulting in efficient & on-time progress.

Supervision: fostering a productive and collaborative environment, through confidence, patience, and respect.

CONTACT DETAILS

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PERSONAL INFORMATION

Year of birth: **1985**

Citizenship: **The Netherlands**

Residency: **Switzerland** (from 2016)

Civil status: **Married**

Languages:

Dutch (native), **English** (C2),
French (C2), **German** (C1)

SKILLS

- Problem evaluation & solving
- Project management
- Leadership
- Communication
- Coaching & teaching
- Programming

EXPERIENCE

- **PATENT EXPERT & EXAMINER** **2024–pres.**
Swiss Federal Institute of Intellectual Property (Switzerland)
 - Examination of patents in various fields and languages.
 - On-demand novelty analysis of inventions in various fields.
 - Written and oral communication with inventors and their lawyers (in English, French, and German).
- **SENIOR RESEARCHER PHYSICS** **2019–2024**
EPFL (Switzerland) – Funding: FNSF Ambizione (Switzerland)
 - Subjects: tribology, fracture, earthquakes, glasses, complex systems.
 - Acquisition and management of funding (567 kCHF).
 - Design and execution of research.
 - Selection and management of interdisciplinary collaborations.
 - Supervision of bachelor and master students in physics.
 - Co-supervision PhD student in physics.
 - Proposal of a novel, interdisciplinary, theory of friction.
 - Delivery of top journal publications and conference presentations.
 - Design, implementation, execution high-performance computations.
 - Reviews for top journals.
 - Data-champion.
- **POSTDOCTORAL RESEARCHER PHYSICS** **2016–2019**
EPFL (Switzerland) – Funding: NWO Rubicon (The Netherlands)
 - Acquisition and management of funding (160 k€).
 - Delivery of top journal publications and conference presentations.
 - Co-supervision bachelor students.
 - Teaching assistant statistical physics (physics).
 - Teaching assistant continuum mechanics (civil engineering).
 - Design, implementation, execution high-performance computations.
 - Reviews for top journals.
- **POSTDOCTORAL RESEARCHER VALORIZATION** **2016**
M2i & Tata Steel (The Netherlands)
 - Acquisition and management of funding (10 k€).
 - Development of a numerical tool for industrial usage.
- **RESEARCH INTERNSHIP** **2010**
Harvard University (United States)
 - Design and analysis of a 3D meta-material.
 - Development of numerical tools.

EDUCATION

- **PHD MECHANICAL ENGINEERING (CUM LAUDE)** **2012–2016**
Eindhoven University of Technology (The Netherlands)
 - Part of, experimental-theoretical, Public-Private-Partnership (Eindhoven University, Material Innovation Institute M2i, Tata Steel).
 - Topic: mechanics & fracture of high-grade steel.
 - **Martinus van Marum award (12.5 k€) for:**
Best PhD thesis in five years in the engineering sciences.
 - Various awards.
 - Delivery of journal publications and conference presentations.
 - Co-supervision of bachelor and master students.
 - Teaching assistant finite element method, and design-based learning.
 - Responsible teacher programming course.
- **MSc MECHANICAL ENGINEERING (GREAT APPRECIATION)** **2009–2012**
Eindhoven University of Technology (The Netherlands)
 - Specialization: mechanics of materials.
 - Elective courses mathematics (numerical solvers).
- **BSc MECHANICAL ENGINEERING (GREAT APPRECIATION)** **2004–2009**
Eindhoven University of Technology (The Netherlands)
 - Minor: entrepreneurship.
 - Winner entrepreneurship award (1 k€).

PROBLEM-SOLVING EXPERIENCE

- **ANALYTICAL THINKING:**
 - Combining theoretical physics & mechanics.
 - Designing and performing high-performance computing (numerical mathematics).
- **CRITICAL THINKING:**
 - [Proposing a novel theory of friction](#) (despite it being an old and vast subject).
 - Performing patent assessments (and considering solutions in case of problems).
- **CREATIVITY:**
 - Proposing novel simple models by abstraction.
 - Combining knowledge from various disciplines.
- **ADAPTABILITY:**
 - Integrating in a new country.
 - Developing proficiency in various scientific fields.
 - Transitioning between various professions (academia and public administration).
 - (Student job) Advising on and operating of rental (heavy) construction-equipment.

PROJECT MANAGEMENT EXPERIENCE

- **UNITING:**
 - Initiating and fostering various interdisciplinary collaborations.
- **PRIORITIZING & ACCOUNTABILITY:**
 - Balancing ad-hoc and permanent solutions.
 - Anticipating deadlines, co-workers and other third parties.
- **ACHIEVING RESULTS, PERSISTENCE & RESILIENCE:**
 - Accomplishing goals [Ambizione grant](#).
 - [Publishing 29 publications in top international journals](#) (> 750 citations on Google Scholar).
 - (Non-professional) [Becoming Swiss rowing champion](#).
- **BUDGETING:**
 - Managing research project budgets.
 - (Volunteering) Managing sport club budget.

LEADERSHIP EXPERIENCE

- **INSPIRING:**
 - Proposing and directing challenging student projects.
 - Finishing [world's longest rowing race on closed water](#), twice.
 - Performing open science & [open-source coding](#).
- **MOTIVATING & GUIDING:**
 - (Co)-Supervising a [PhD student](#), and [32 bachelor and master projects](#).
 - (Volunteering) Leading mountaineering & rowing outings (both high-risk sports).
 - Taking a motivating role in a team (professionally and in sports).
 - (Student job) Being a high school tutor (mathematics and physics).
 - Initiating a social awareness game at the beginning of the COVID-pandemic: [TV-interview RTS](#).
- **COMMUNICATING:**
 - Authoring scientific publications (in English).
 - Giving conference presentations and seminars (in English and Dutch).
 - Performing patent-assessments and novelty analyses in French, German, and English.
 - Providing an interview with the [FNSF Horizons magazine](#) (in French).
- **INCLUDING:**
 - (Volunteering) Being a buddy of a student on the autistic spectrum.
 - (Volunteering) Training of diverse rowers.
 - (Volunteering) Training of field-hockey keepers.
- **DELEGATING:**
 - Running various scientific collaborations.
 - (Student job) Being a shift leader of a catering team in the football stadium of PSV.