TOON WEYENS

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Bridging science, data, and business to build AI solutions that drive real impact

AI Solutions Architect with more than a decade of experience across pre-sales, enterprise AI platforms, and scientific High-Performance Computing (HPC). Strong expertise in building relationships of trust and navigating complex technical discussions. Experience in architecting data and AI solutions tailored to client objectives, while providing critical feedback directly from the field to R&D and product teams. Deep technical proficiency in HPC, distributed and cloud computing, as well as modern ML/DL techniques, coding and scripting methods. Passionate about building the solutions of the future by transforming customer needs into innovative, scalable, cost-efficient AI implementations that drive real business value and measurable impact. Commited to fostering lasting technical relationships that ensure sustained success and long-term growth throughout the customer journey.

Values:	Meaningful work · Authentic relationships · Radical transparency · Curiosity and experimentation · Ownership and excellence · Efficiency · Positive impact
Abilities:	Empathic and communicative · Analytical · Culturally adaptive · Scientifically rigorous · Proactive and collaborative

Nationality:	Belgian
Date of birth:	1987

EXPERIENCE

Jan '25 - Current **University Lecturer** - Eindhoven University of Technology

Teach in both the Bachelor in Applied Physics and the Master in Nuclear Fusion programs, covering plasma physics and computational methods for High-Performance Computing (HPC).

Mar '24 - Current **Senior Sales Engineer** - Anomalo

Partner with C-level and senior data leaders at global enterprises and AI-native technology companies to ensure trust in their data at scale. Combine data science, architecture, and business consulting expertise to help organizations automate data quality, strengthen governance, and accelerate AI adoption.

- **Led multi-stakeholder PoCs and enterprise evaluations** with customers including BP, Kingfisher, Zalando, and others — representing over €4.5M in multi-year enterprise contracts..
- **Engage directly with executive sponsors** (CDOs, CIOs, Heads of Data) to define success metrics and design scalable, compliant data-trust architectures.
- **Navigate enterprise sales** cycles involving procurement, security, and data governance teams to accelerate platform adoption.

- **Champion platform capabilities** across technical and business audiences, including applications of Generative AI for data quality automation and explainability alongside classical machine learning approaches.
- **Collaborate cross-functionally** with product, R&D, and customer success teams to translate field insight into roadmap impact. Special focus on Anomalo's Unstructured product which leverages genAI to create agentic DQ.

Nov '22 - Mar '24 **Presales Solutions Architect** | **Global Team Lead** (last 6 months) - Dataloop

Enabled large enterprises and AI-native organizations to operationalize data pipelines for computer vision, NLP, and multimodal AI at scale. Combined deep technical expertise with business acumen to lead complex, high-value engagements and mentor a global presales team.

- **Generated approximately €1M in new annual recurring revenue (ARR)** over 18 months by leading enterprise AI data initiatives across automotive, defense, insurance, and telco sectors.
- **Led the global Presales Solutions Architecture team**, aligning regional priorities, sharing best practices, and elevating technical sales performance company-wide.
- **Partnered with senior tehnical and business leaders** to define architecture, KPIs, and success criteria for strategic AI programs.
- **Designed methodology for full-cycle PoCs and solution evaluations**, ensuring alignment between business objectives and technical feasibility.
- **Collaborated closely with R&D and Product Management** to shape platform evolution based on customer feedback from the field.
- **Created technical content and enablement materials** that improved sales efficiency and shortened enterprise sales cycles.
- **Built and maintained strategic relationships** across both technical and executive levels to secure long-term customer success.

Oct '21 - Nov '22 **Customer Facing Data Scientist, Pre-Sales** - DataRobot

Joined DataRobot's European pre-sales organization during its global expansion phase, working alongside some of the industry's most experienced enterprise AI professionals. Helped large organizations accelerate their AI maturity by translating complex machine learning capabilities into clear business value.

- **Led technical PoVs** for enterprise customers in utilities, insurance, and manufacturing, connecting AI initiatives to strategic KPIs and ROI.
- **Collaborated with account teams and global sales leadership**, learning and applying best-in-class enterprise sales methodologies (MEDDICC, consultative storytelling, value framing).
- **Partnered with IT directors and data science leaders** to align AI strategy with existing data infrastructure and governance frameworks.
- **Delivered executive-level demos and workshops** that demonstrated how to scale AI safely and effectively across the enterprise.
- **Provided structured field feedback** to R&D and product teams to inform roadmap priorities and improve enterprise readiness.

Jan '19 - Aug '21 **Industrial Data Science Consultant** - MathWorks

Played a key role in expanding MathWorks' footprint from traditional individual and departmental licensing toward enterprise-scale data science and engineering platforms

in the Benelux region. Partnered with both R&D engineers and IT leaders to enable scalable, secure, and collaborative environments for MATLAB and Simulink users.

- **Drove over €1.5M in additional annual recurring revenue (ARR)** by establishing server-based enterprise data science platforms across key industrial accounts.
- **Led strategic customer engagements** to design and implement modern, browser-accessible data and engineering environments integrated with live data streams and CI/CD pipelines.
- **Advised internal and external stakeholders** on architecture, deployment, and best practices to ensure scalability and compliance.
- **Enabled cross-functional collaboration** by connecting internal experts, mentoring colleagues on emerging technologies, and aligning resources for strategic accounts.
- **Championed MathWorks products** through public speaking, webinars, and workshops, including the Deep Learning with MATLAB series
- **Specialized in Data Science, IoT, Parallel and Cloud Computing (AWS & Kubernetes certified), High-Performance Computing, Enterprise Integration, and Computational Physics.

Jan '17 - Dec '18 **Postdoctoral Monaco Fellow** - ITER Organization

Conducted advanced research in plasma physics and magnetohydrodynamic stability at the world's leading nuclear fusion project, ITER. Awarded the prestigious Monaco Fellowship, a highly competitive two-year research grant supporting excellence in fusion energy science.

- **Published multiple first-author papers** in peer-reviewed journals advancing understanding of plasma edge stability.
- **Investigated 3D effects on Edge-Localized Mode (ELM) stability**, combining analytical modeling and HPC simulation.
- **Applied and extended** the numerical code **PB3D**, originally developed during Ph.D. research, to model nonlinear plasma behavior in fusion devices.
- **Collaborated with international research teams** to validate simulation outcomes against experimental results and support ITER design objectives.

EDUCATION

Jan '12 - Dec '16 **Ph.D.** - Universidad Carlos III de Madrid · Eindhoven University of Technology · ITER Organization

Advanced research on plasma stability and 3-D effects in magnetic confinement fusion. Combined theoretical modeling, high-performance computing, and code development to study high-n instabilities in fusion reactors.

- **Authored multiple first-author publications** in quality peer-reviewed journals.
- **Designed research project** to improve understanding of *high-n* instabilities, important for toroidal magnetic confinement devices for nuclear fusion.
- **Developed dedicated mathematical theory** [Weyens et al, 2014, P.o.P, 21, 4]
- **Designed optimized numerical code, PB3D** [Weyens et al, 2017, J.c.P, 330]
- **Became expert** in modern Fortran, High-Performance Parallel Computing (HPC) techniques

Sep '10 - Aug '12 **Master of Science - Nuclear Fusion Science & Technology** - Ghent University · Universidad Carlos III de Madrid · Université de Lorraine

Completed the European Erasmus Mundus joint master's program in fusion engineering and science.

- **Studied advanced plasma physics and reactor design**, with interdisciplinary coursework across three European universities.
- **Engaged in international academic collaboration** with strong focus on cultural and linguistic immersion.
- **Graduated in top 5%** of class.

Sep '08 - Aug '10 **Master of Science - Energy Engineering** - University of Leuven · Technische Universität Berlin (exchange)

Multidisciplinary engineering program focused on energy systems, economics, and sustainability.

- **Studied** integrated thermomechanical, electrical, and economic analysis of energy systems.
- **Completed academic exchange at TU Berlin**, focusing on applied energy economics.
- **Graduated in top 15%** of class.

May '24 - July '24 **Online Course – Mastering LLMs for Developers & Data Scientists** – Maven (by Dan Becker & Hamel Husain)

State of the art crash course in everything required to work with LLMs, taught by two recognized experts, as well as a host of guest speakers.

- **Fine-tuning** OSS LLMs with Axolotl; when/why to fine-tune.
- **Instrumentation & evals** with Inspect, LangSmith; Text2SQL evals.
- **RAG** design and iterative improvement.
- **Scaling & efficiency**: PyTorch FSDP, torchao; OOM avoidance.
- **Prototyping & deployment**: Gradio apps; Modal/Predibase/Replicate; Hugging Face AutoTrain.

December '18 **Online Course - Computability, Complexity & Algorithms** - Udacity advanced, by Georgia Institute of Technology

- Computational theory including languages, countability, and Turing machines.
- Algorithmic complexity (P, NP) and implemented advanced algorithms such as dynamic programming, FFT, and maximum flow.

October '18 **Online Course - Bayesian Methods for Machine Learning** (part of Advanced Machine Learning) - Coursera advanced, by Higher School of Economics Moscow

- Applied Expectation-Maximization (EM), Variational Inference, and MCMC for probabilistic modeling.
- Implemented Variational Autoencoders and Gaussian Processes using PyMC3, GPy, and GPyOpt.
- Graduated with honors (certificate)

May '18 **Online Specialization - Deep Learning** - Coursera intermediate, by Andrew Ng

- Studied deep learning foundations, convolutional and recurrent neural networks.
- Implemented CNNs, RNNs (BiLSTM, GRU), and sequence models in TensorFlow and Keras.

- Applied optimization and regularization techniques including Adam, AdaMax, BatchNorm, and dropout.
- Completed with distinction (certificate)

May ’14 **Summer School - 23rd Summer School on Parallel Computing** - CINECA, Casalecchio Di Reno

- Intensive 10-day graduate program on modern High-Performance Computing (HPC) systems.
- Covered parallel architectures, MPI, OpenMP, profiling, and debugging.
- Gained hands-on experience optimizing code for multi-core and distributed environments.

SELECTED PROJECTS

Jan ’13 - Current **PB3D** - **P**eeling-**B**allooning in **3**-**D**

- Developed a modern high performance Fortran code for analyzing peeling-ballooning stability in toroidal magnetic confinement devices.
- Designed for high-performance and parallel computation, supporting general 3-D plasma configurations.
- Applied in nuclear fusion research for studying high-n instabilities and plasma edge stability.
- Website: PB3D.github.io

for experts:

- Mathematical minimization of functional, leading to generalized eigenvalue equation
- *high-n* instabilities easily excited by extreme temperature and pressure gradients from plasma (150 million °C) to the cold reactor walls (−260.8 °C)
- General 3-D configurations, perturbed plasma edge [Weyens et al, 2017, J.c.P, 330]
- Postdoctoral research: investigate 3-D effects, e.g. for resonant magnetic perturbations for ELM control (RMP) or toroidal field coil (TF) ripple

Feb ’18 - Mar ’18 **Pylgrim** - Elementary Shortest Path Problem with or without Resource Constraint

- Implemented Python and C++ algorithms for the NP-hard Elementary Shortest Path Problem (ESPP).
- Benchmarked recent academic methods from Di Puglia Pugliese (2016) and Boland (2006).
- Explored computational complexity and optimization strategies for constrained routing.
- Source: GitHub

Jan ’18 - Dec ’18 **Kraemer** - High-frequency crypto automated arbitrage trader

- Co-created automated trading framework using Python for high-frequency arbitrage across exchanges.
- Integrated mathematical modeling, deep learning, and financial data engineering.
- Focused on efficient order execution and latency-sensitive decision-making.

Oct ’18

Facial Composits: Finding the Suspect - Capstone project for Bayesian Methods for Machine Learning

- Co-created automated trading framework using Python for high-frequency arbitrage across exchanges.
- Integrated mathematical modeling, deep learning, and financial data engineering.
- Focused on efficient order execution and latency-sensitive decision-making.

SKILLS

Languages	English (fluent) · Dutch (fluent) · Spanish (fluent) · Portuguese (fluent) · French (advanced) · German (intermediate) · Italian (basic)
Sales & Communication	• **MEDDICC** · Enterprise sales qualification framework. • **Insight Selling** · Storytelling-based consultative sales methodology. • **Write to the Top** · Julia Bindmans' course on customer-oriented writing skills • **Audience Focused Presentation** · TU/e doctoral training course
Computer & Cloud	• **Linux**: Preferred operating system for development • **Cloud**: AWS (Certified Solution Architect), Azure (workign knowledge) • **Containerization**: Docker, Kubernetes (CKAD certified) • **Version control**: git, GitHub, GitLab • **MLOps Platforms**: HuggingFace, Datarobot, Domino Data Lab • **HPC & Visualization**: ParaView, VisIt, HDF5, SurfSara gateways • **Big Data**: Hadoop, Spark • **Infrastructure as Code**: Currently upskilling in Terraform, Ansible • **OSS**: Maintainer of PB3D
Programming	• **Python**: data analysis, ML/DL, parallel processing (numpy, pandas, PyTorch, TensorFlow, Keras) • **Fortran**: scientific computing and HPC (PB3D) • **MATLAB**: powerful toolset for engineers and scientists • **C++**: algorithmic prototyping (BOOST library) • **HPC and GPU-aware computing**: MPI, OpenMP; SLURM, PBS Torque, familiarity with CUDA concepts • **SQL**: data access and preprocessing • **PBS Torque**, **SLURM**: job managers used for cluster computing • **Bash**, **Make**, **YAML**: experience with linux scripting and development • **API-based**: experience with REST for integrations with platforms such as Anomalo. Currently upskilling on FastAPI & Streamlit
ML & AI	• Classical ML (scikit-learn), Bayesian modeling (PyMC3, GPy, GPyOpt). • Deep learning architectures (CNNs, RNNs, VAEs, sequence models). • Optimization and regularization (Adam, dropout, BatchNorm).
Other	• **Fusion DC** 2016 Program Representative • **TGD Solutions** 2018 Board Member

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AWARDS, SCHOLARSHIPS & GRANTS

2012-2016 **Doctoral Scholarship**

Universidad Carlos III de Madrid, *CINECA*

PIF scholarship for four years, summer school funding

2017 **Ph.D. Research Award**

European Physical Society

The Plasma Physics Division of the European Physical Society (EPS) shall grant up to four prizes annually to young scientists from the 38 European countries associated with the EPS in recognition of truly outstanding research achievements associated with their PhD study in the broad field of plasma physics

website: EPS

2019 **Monaco/ITER postdoctoral Fellowship**

Principality of Monaco

The Monaco/ITER Postdoctoral Fellowship Program allows young researchers to participate in one of the great scientific and technical challenges of the 21st century and to work closely with leading experts in fusion science and technology within a unique international setting. The principal motivation of the research fellowships is the development of excellence in research in fusion science and technology within the ITER framework. Brilliance and creativity, together with understanding of the relevance of the individual research interests to the ITER Project, are a key requirement.

website: ITER

2021 **MVP Award**

DataRobot

Most valuable award for Pre-Sales

website: DataRobog

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