Clodéric Mars
AI Product Engineer & Tech Leader

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I specialize in **human-AI collaboration**, with one hand in leadership and the other in development. The products I built have:

* empowered artists to **direct autonomous characters** in movies,
* enabled engineers **optimize energy & transportation infrastructures**, and
* assisted instructors in delivering **personalized training simulations**.

**Key skills:** Applied Artificial Intelligence, Technical leadership, Software architecture, Program management, B2B presales & project management, Technology transfer, Distributed systems, Cloud infrastructure, MLOps, Full-stack development, Written and oral communication, French (native), English (full professional proficiency).

# Experiences

**VP of Engineering -** [**AI Redefined**](https://www.ai-r.com) **since 2021/02** *Montréal, Canada*

* Directed the technology and research distributed team of 16 engineers and researchers across 3 product teams, generating ~$1.5M ARR, 9 peer-reviewed papers, and 3 patents.
* Architected and developed [Cogment](https://cogment.ai/), evolving it from a technological proof of concept into a robust, open-core MLOps platform adopted both internally and externally.
* Designed and trained decision-making AI agents collaborating with humans and leveraging deep reinforcement learning, large language models and symbolic AI to solve complex real-world problems.
* Forged collaborations across industries including aerospace and defense (e.g. [Thales](https://www.thalesgroup.com/), [CAE](https://www.cae.com/), and [NAV CANADA](https://www.navcanada.ca/)) ; energy (e.g. [RTE](https://www.rte-france.com/)) ; manufacturing (e.g. [Renault](https://www.renaultgroup.com/)) ; and academia, (e.g. the [University of Alberta](https://www.ualberta.ca/), [MILA](https://mila.quebec/), and [IRT SystemX](https://www.irt-systemx.fr/)).

**Skills:** Reinforcement learning, Deep learning, Large Language Models, Simulation, Python, Go, Kubernetes, AWS, Azure.

**Freelance AI engineer - AI Redefined from 2020/08 to 2021/01** *Paris, France*

*Starting position at AI Redefined as a freelancer before moving to Canada.*

**Co-founder & CTO -** [**craft ai**](https://www.craft.ai/) **from 2015/03 to 2020/04** *Paris, France*

* Cofounded and developed the company from 7 to 20+ employees, securing ~9M€ in funding.
* Directed the product develoment and research team generating ~1M€ ARR, and publishing 5 peer-reviewed papers.
* Architected and developed an explainable AI SaaS for time series modeling & forecasting, enabling trustworthy personalized decision support and automation across industries.
* Deployed the product across ~10 AI projects, primarily in the energy sector, including with [EDF](https://www.edfenergy.com/) and [Total](https://www.totalenergies.fr), helping operators and end-users optimize their consumption.

**Skills:** Explainable AI, Machine learning, Data science, Python, Rust, Javascript, Kubernetes, Kafka, AWS, Azure.

**Lead Software Engineer & Product Manager -** [**MASA Group**](https://masasim.com/) **from 2012/01 to 2015/02** *Paris, France*

* Led a team of ~5 software engineers across Paris and Munich developing a behavior tree and spatial reasoning engine.
* Architected and developed an AI agent authoring tool and runtime empowering instructional and game designers to build AI agents for simulations and video games, creating key intellectual property that later became the foundation of **craft ai**.

**Skills:** Game AI, Computational geometry, Simulation, Qt, C++.

**R&D Software Engineer -** [**Golaem** (acquired by Autodesk)](http://golaem.com/) **from 2010/01 to 2011/12** *Rennes, France*

* Took ownership of the navigation engine for virtual crowds, industrializing research prototypes and algorithms developed at Inria.
* Applied crowd simulation technology to diverse use cases, including train car evaluation for [SNCF](https://www.groupe-sncf.com), real-time virtual city population with [Dassault Systèmes](https://www.3ds.com) and crowd simulation for a historical documentary with [Mikros](https://www.technicolor.com/studios/mikros-animation/), which contributed to developing the leading crowd simulation product for the animation and VFX market.

**Skills:** Game AI, Computational geometry, Simulation, Qt, C++.

**R&D Software Engineer -** [**Inria**](https://www.inria.fr) **from 2009/02 to 2009/12** *Rennes, France*

*Starting position at Golaem as a member of the* [Bunraku](https://www.irisa.fr/bunraku) *team.*

**Software Engineer -** [**Teamlog** (acquired by
Open)](https://www.open.global) **from 2006/07 to 2009/02** *Rennes, France*

* Developed a toolchain to create virtual cities for [Orange](https://www.orange.fr), resulting in pedestrian-level digital recreation of Paris and Barcelona.
* Developed a contribution system for [PagesJaunes.fr](https://www.pagesjaunes.fr), enhancing the platform’s user engagement.

**Skills:** Geographic information systems (GIS), Computational geometry, Simulation, Qt, C++, Java.

## Additional activities

**Contributor - The Good AI from 2020/07 to 2020/12**

* Contributed written content about responsible AI.

**Data Scientist (volunteer) -** [**APHP**](https://www.aphp.fr) **from 2020/05 to 2020/06** *Paris, France*

* Supported early COVID-19 epidemiological studies by extracting & preparing data.

**Skills:** Data science, Python, Apache Spark.

**Track chair - nucl.ai from 2015/01 to 2016/07** *Vienna, Austria*

* Curated content, managed speakers and presented tracks at a yearly AI developer conference.

# Education

**MEng (Diplôme d'ingénieur) in Computer Science -** [*INSA de Rennes*](https://www.insa-rennes.fr) **from 2001/09 to 2006/06** *Rennes, France*

Engineering program, with a specialization in computer science.

**MSc in Artificial Intelligence & Computer Graphics -** [*Université de Rennes 1*](https://www.univ-rennes.fr) **from 2005/09 to 2006/06** *Rennes, France*

Academic curriculum focused on **Artificial Intelligence**, including machine learning and symbolic reasoning, & **Computer Graphics**, including virtual reality and animation.

Member of [Inria](https://www.inria.fr)'s [Bunraku](https://www.irisa.fr/bunraku) team, advised by Fabrice Lamarche.

## MOOCS

**Coursera & deeplearning.ai** Build Better Generative Adversarial Networks (GANs) **2020/11** *Deep Learning*

**Coursera & deeplearning.ai** Build Basic Generative Adversarial Networks (GANs) **2020/11** *Deep Learning*

**OpenClassrooms & Groupe INSA** Utilisez l'apprentissage par renforcement avec un drone **2020/06** *Reinforcement Learning*

**OpenClassrooms & CentraleSupelec** Réalisez des calculs distribués sur des données massives **2020/05** *Data Engineering, Distributed Computing*

**Stanford University & ml-class.org** Machine Learning course **2011/12** *Machine Learning*

# Peer-reviewed publications

**Towards Human-Steerable Battery Energy Storage System Optimization: A Novel MDP Framework
AASG workshop (Autonomous Agents for Social Good) at AAMAS, Auckland, New Zealand** (2024/06) *Sai Krishna Gottipati, Clodéric Mars, Julien Gabaud, Vahid Abdollahi, Laila El Moujthahid, Matthew E. Taylor*

**Immersive AI assistance during eVTOL multi-agent ATC traffic routing
I/ITSEC (Interservice/Industry Training, Simulation and Education Conference), Orlando, Florida** (2023/11) *Jean-François Delisle, Simon Riendeau, Clodéric Mars, Sagar Kurandwad*

**Hiking up that HILL with Cogment-Verse: Train & Operate Multi-agent Systems Learning from Humans
AAMAS (International Conference on Autonomous Agents and Multiagent Systems), London, UK** (2023/05) *Sai Krishna Gottipati, Luong-Ha Nguyen, Clodéric Mars, Matthew E. Taylor*

**WIP: Human-AI interactions in real-world complex environments using a comprehensive reinforcement learning framework
ALA (Adaptive and Learning Agent) @ AAMAS (International Conference on Autonomous Agents and Multiagent Systems), London, UK** (2023/05) *Md Saiful Islam, Srijita Das, Sai Krishna Gottipati, William Duguay, Clodéric Mars, Jalal Arabneydi, Antoine Fagette, Matthew Guzdial, Matthew E. Taylor*

**The three stages of Explainable AI: How explainability facilitates real world deployment of AI
EGC (Extraction et Gestion des Connaissances), Brussel, Belgium** (2020/04) *Clodéric Mars, Rémi Dès, Matthieu Boussard*

**Periodic split method: learning more readable decision trees for human activities
CNIA (Conférence Nationale sur les Applications Pratiques de l'Intelligence Artificielle), Caen, France** (2017/07) *Matthieu Boussard, Clodéric Mars, Rémi Dès, Caroline Chopinaud*

**Hierarchical Architecture for Group Navigation Behaviors
Game AI Pro 2** (2015/06) *Clodéric Mars, Jérémy Chanut*

# Talks

**Building AI Assistants for Augmenting Human Operators: A Roadmap Towards Creating Superteams
AI DevWorld, Santa Clara, California** (2023/10/25)

**Trustworthy Human-Machine Teaming: The Next Stage of Evolution
REAIM (Responsible AI in the Military Domain), The Hague, Netherlands** (2023/02/15)

**Towards Human-AI Teaming: Intelligence Ecosystems to Tackle High-Stakes Use Cases
Data Council, Austin, Texas** (2022/03/23)

**Améliorer l'expérience utilisateur grâce à l'intelligence artificielle
"Hello! Business Talks" Humanité(s) Digitale(s), Paris, France** (2017/03/09)

**Environmentally Conscious AI: Improving Spatial Analysis and Reasoning
GDC (Game Developers Conference) AI Summit, San Francisco, California** (2014/03/17)

**Towards Directable Autonomous Crowds
Paris Game/AI Conference, Paris, France** (2011/06/24)

# Other Publications

**The future of human-AI systems is already here – it’s just not evenly architected
Military Embedded Systems** (2021/06)

**AI & Biases 101: The bakery case
The Good AI** (2020/11)

**BT 101 – Behavior Trees grammar basics
craft ai's blog** (2015/06)