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Next Step Fusion is a Luxembourg-based software development and machine learning company in the fusion industry. We offer advanced simulations, tokamak design and optimization, plasma control and AI/ML solutions for the fusion industry.

Our unique interdisciplinary team of 20+ experts in plasma physics, tokamak simulation and control, AI/ML, and software development is driven by the goal of providing high-quality solutions that accelerate the commercialization of fusion as an abundant energy source for humanity.

Services and products:
- Advanced Tokamak Simulations. We apply our expertise and the advanced tokamak simulator NSFsim (https://nextfusion.org/simulations) to provide services in customizable plasma equilibrium simulations, discharge scenario development, plasma performance optimization, controllers development and testing, and disruption simulation and analysis.

- Fusion Twin Platform (https://fusiontwin.io). A free web-based tool that provides access to advanced tokamak simulations (DIII-D, ISTTOK, NSF NTT, and more coming soon), fusion data visualization, collaboration and data management, and a live demo of our technology.

- Tokamak Design and Optimization. We offer the preliminary design of new tokamaks tailored to meet specific operational goals (e.g. our negative triangularity tokamak NSF NTT), the validation and optimization of existing tokamak designs to enhance performance and efficiency, and the automated discovery and optimization of tokamak operational parameters.

- Plasma Control Solutions (https://nextfusion.org/pcs). We develop conventional and AI/ML tools and technologies to create reliable plasma control solutions, including a reinforcement learning framework for building ML controllers for plasma shape, position, and other parameters. The plasma-state-oriented, machine-agnostic Plasma Control System we are developing will be the quintessence of our efforts and expertise, designed for current and next-generation tokamaks, as well as future fusion reactors.

- AI/ML Solutions. We research applications of AI/ML technologies to address challenges in plasma diagnostics, simulations, control, and the operations and maintenance of future fusion power plants.

For more information, visit our website (nextfusion.org) and tech blog.
Contact us at info@nextfusion.org.

* What form of collaboration would you like to promote?
- ⦿ Offer - my organisation has relevant expertise, technologies, or raw materials to offer
- ◯ Request - we are looking for specific expertise, technologies, or raw materials
- ◯ Both of the above

* Please indicate below the collaboration preferences you wish to highlight (you can select more than one)
- ☑ Specific expertise and technologies
- ☐ Specific materials
- ☑ To sub-contract to partners

☑ To co-contract with partners

☐ Sharing general technologies and business presentations

☐ Other

* Your contact email

info@nextfusion.org

* Your organization name

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