

Curriculum Vitae

Ashkan Pirmani. I make evidence out of health data that cannot be gathered in one place. I also build the systems that let other groups do the same. Six years across registries, ordinary care records and consortia in more than thirty countries. From September 2026 I do this inside a company. The roles closest to it sit between applied machine learning, real world evidence, and the engineering underneath both.

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01 IMPACT

The four results worth knowing

Each one links to the paper it came from, and says what kind of result it is. Nothing here is a projection unless it says so.

7.2% and 31% better

Fitting a federated model to each country beat the same method without that fitting, at ranking who will get worse and at catching them. It also beat training on everything pooled together, by 3.8%. Measured in simulation on records from 26,246 patients, 283,115 clinical episodes, contributed by 146 centers. I conceived the study, ran the experiments, analyzed the data and led the writing. First author, in a collaboration of 73. Funded by the Flanders AI Research Program.

[npj Digital Medicine 8\(478\), 2025](#)

45.5% more records to work with

Designed and built the federated route into a study that already had two other ways in. Five registries joined through it that could not have joined otherwise. The four counted in the paper added 3,527 records to the 7,757 already collected. Deployed and run by the registries themselves. This is a data feasibility result first. The question could not have been answered on the records that were already reachable. The collection was run by the MS International Federation and the MS Data Alliance. Its findings went into the global covid advice for people with multiple sclerosis. First author on the architecture paper.

[JMIR Medical Informatics 11\(1\):e48030, 2023](#)

Half the sites, almost all the score

On a public benchmark, letting half the centers stay centralized instead of forcing all four to federate kept 97.5% of the fully federated score. That is the degree of federation, and it is the idea I am known for. A working prototype, evaluated on Azure by us.

[JMIR Formative Research 8:e55496, 2024](#)

A public resource, open and maintained

FLkit is live: 39 pages, eight sections, 11 ways in depending on your role, seven worked project stories, 29 contributors. Supported by ELIXIR Belgium. These are numbers about what is in it, not a measurement of how many teams use it. That evaluation has not been done yet.

[Pirmani, Vermeulen et al., 2026](#)

What I have done

From Sep 2026

Innovation Mandate, with Johnson & Johnson Innovative Medicine

An Innovation Mandate from Flanders Innovation and Entrepreneurship, the Flemish government's innovation agency. The grant goes to a consortium of one company, one university and one researcher. Two years. The first develops the method at the university. The second applies it with the company, which co-funds it and sets the direction, and includes working inside it. Treatment comparison from routine records, where no trial exists.

- Starts September 2026. Nothing here has happened yet.

2024 to now

Postdoctoral Researcher

KU Leuven and Hasselt University, Belgium.

- Lead FLkit. It went from an internal need to a public resource other groups can use without asking me.
- Designed and built FLoRank, the method behind the ECTRIMS grant. Taking it from a prototype to its first run on a real data network.
- Single point of contact across more than thirty countries, between the people who hold the data, the people who treat the patients, and the people who decide what is allowed.
- Supervise master's students and teach the data science course.

2020 to 2024

Doctoral Researcher

KU Leuven and Hasselt University, Belgium.

- Built the federated route into the worldwide multiple sclerosis and covid data sharing effort, so registries that could not send data could still take part. It became the largest group of its kind.
- Author of FL4E, and of the degree of federation.
- Ran the first systematic comparison of personalized federated learning for two year disability progression. Published in npj Digital Medicine, 2025.

2017 to 2019

Research Assistant, Decision Support Systems Lab

IranDoc, Iranian Research Institute for Information Science and Technology, Tehran.

- Agent based and system dynamics simulation of the national parcel network, searched with a genetic algorithm for a better set of hubs. Best scenario: 15% lower projected transport cost. Never built, so never realized.
- Delivered as a decision support dashboard and a policy analysis to top level executives.

Selected systems

What each one achieved is in section 01. This is what state it is in and where to find it. Not all of it is a repository.

2024 to now

FLkit

Lead developer. Public and maintained.

2023 to now	FL4E and FL4E-Analysis Author. Reference implementation and the benchmarks behind the paper.
2024 to now	FL-MS-RWD Author. The study code for the npj paper.
2021 to 2023	Global Data Sharing Initiative, federated route Architect. Not a repository. Infrastructure that ran inside five registries that were not allowed to send data, so they could take part anyway.

04 EDUCATION

Where I trained

2020 to 2024	Dual PhD Electrical engineering, KU Leuven. Biomedical sciences, Hasselt University. Belgium. Defended November 2024. – Thesis: From Centralized to Federated. The Journey of Data in Healthcare. – Supervisors: Yves Moreau (KU Leuven), Liesbet M. Peeters (Hasselt University), Niels Hellings (co-supervisor).
2016 to 2019	MSc, Industrial Engineering Socio-economic systems. Kharazmi University, Tehran.
2015 to 2017	MBA, Quality Engineering Tose'e Institute, Tehran.

05 AWARDS

Recognition

2026	Innovation Mandate, Flanders Innovation and Entrepreneurship Awarded to one researcher, with a company and a university behind them. The second year is not automatic; it depends on passing a review of the first. The work it funds is under Experience.
2025	ECTRIMS personal grant for scientific quality Awarded for FLoRank, presented at ECTRIMS 2025, Barcelona.
2019	Fully funded PhD scholarship Both doctorates were funded in full, KU Leuven and Hasselt University, through to the defense in 2024.

06 TEACHING

Teaching and supervision

2022 to 2024	Data Science in Healthcare Teaching member, Healthcare Engineering program, Hasselt University. Academic years 2022 to 2023 and 2023 to 2024.
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Master's thesis supervision

Seven Master's theses in Artificial Intelligence, KU Leuven.

- Predicting admission to care. Federated, pooled and local data compared.
 - How splitting the data changes what the model learns.
 - Federated boosting in semi-supervised learning.
 - Contrastive learning for federated models.
 - Personalized models. Architectures and parameter exchange.
 - Fine-tuning a global federated model for local performance.
 - Early disease detection from shallow whole genome sequencing of cell-free DNA.
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07 AREAS

Areas I work in

Every paper, abstract and chapter is on the publications page. Talks and news are on their own page.

Methods

Federated learning and federated analysis

Personalization under non-identical data across sites

Privacy-preserving machine learning

Survival analysis and classification on clinical data

Data

Real world and observational data

Cohort building and phenotype definition across registries

Registry harmonization across countries, and data quality

Data feasibility: whether a question can be answered at all

OMOP common data model, through OHDSI

FAIR data practice and standardization

Low prevalence and rare disease research

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Last updated 2 September 2026. ashkan_pirmani@outlook.com