



French AI Schools train and match jobs for new-to-tech learners

This private-nonprofit partnership is enabling individuals to change careers and a nation to pursue an ambitious artificial intelligence strategy

More than 300 applications in eight months—and zero job offers. Yacine Souiki, who lives in Paris, France, struggled to keep trying in the face of such discouraging numbers while he was unemployed.

The retail and restaurant management contract gigs that had sustained him dried up, and he wasn't able to pay his own or his widowed mother's bills. Then he found the Simplon AI School. He went through the program's intensive training, where his unconventional background wasn't a disadvantage but rather an asset, helping him look at problems differently. He got up to speed on multiple programming languages, dove deep into data, and brushed up on the soft skills that would help him adapt to corporate culture within an IT department.

Now Souiki is now working as a data scientist at the AI and technology company Avanade. "Thanks to this training, I found my purpose: to help others," Souiki says. "AI is an amazing tool that we should use to find solutions. That is why I want to be a part of it."

The challenge

With an average unemployment rate of 9.1 percent in 2019—and a youth unemployment rate that neared 20 percent¹—France has some of the most difficult joblessness conditions in the European Union.

At the same time government is working to triple the jobs in France that require AI skills in the next three years in the next three years in order to revitalize its technology and innovation industry². A vast majority of current AI experts have high-level master's degrees or PhDs, yet many current openings and positions that will be created could be filled by technicians without that extensive background.

Finally, like many technology fields globally, France's AI industry doesn't mirror the country's diverse population. Yet people of different backgrounds are needed to solve complex problems and avoid biases in tech solutions.

"Skilled labor shortages are bottlenecks to inclusive growth and limit the speed of businesses' transformation," says Nicolas Amar, French Deputy Coordinator for National AI Strategy. "If we don't address issues of labor shortage in AI-related jobs, we risk depriving the economy of growth drivers, widening wage gaps and missing an opportunity to improve economic inclusiveness. Those objectives might even be more crucial in a post-COVID world."

The fix

A partnership between the private sector, French government, and social enterprise Simplon resulted in a new approach. Microsoft and Simplon created the Microsoft AI School program and curriculum, and schools are funded in part by strategic partners such as Crédit Agricole, Orange, and Avanade. At the end of the 19-month training and apprenticeship, the French Ministry of Labour awards trainees certificates in data and AI.

These AI Schools in France set out to close the employment gap by teaching data science, AI, and soft skills to adults who are new to the technology industry. It intentionally recruits people who have traditionally had fewer opportunities for AI careers, such as women and people with autism.

“I became more self-confident since the training gave me job opportunities. It allowed me to be more ambitious.”

-Garance Casalis-Dabrowski, data scientist at the French energy company Total and an AI School graduate

Partnering companies and Simplon staff together select the 20 to 25 students, none of whom have degrees in IT fields, in each cohort. Interviewers look for motivation and commitment—traits necessary to complete the rigorous and fast-paced training.

For the first part of the initial seven-month training, participants learn Python and the math required in data science. Next, they spend four months diving into machine learning and other applications of AI by working with use cases and data sets gathered from companies that have partnered with the school. During the final month, they focus on a single use case tailored to the job description they'll perform after graduation. Throughout, students practice soft skills such as project management, public speaking, and teamwork.

After those seven months, participants begin working as paid apprentices. Over 12 months, they spend three weeks in the office, followed by a week of ongoing training at the AI School. The continued education helps deepen participants' skills and fills any gaps they've encountered on the job.



There are **14 AI Schools** in France, which serve every region in the country

The Simplon AI School has scaled to 14 locations in just two years while maintaining a 90% employment rate for participants. How? “We focus on the right goal—to find jobs for learners,” says Louise Joly, program director of the AI School. She adds, “That’s why we connect what participants learn with realities in the job market.”

Partnerships with companies are critical to serving students and expanding to new sites. The schools use the same curriculum with minor adaptations to meet local business needs (e.g. skipping Python if employers want new hires to know R). And partnering with businesses local to the schools means that students don’t have to relocate for employment—thereby enriching host communities.

With such a successful and replicable model, Simplon is in the process of scaling the AI Schools beyond France. It is leveraging business and governmental partnerships to reduce unemployment across Europe.

“I used to feel stuck in my professional life. Now that I learned about AI and data, I have a lot of possibilities. I can be useful, I can work. I can build the future.”

-Nada Avril, data scientist apprentice at the data solutions firm Umanis and an AI School graduate

Promising Practices for Deeper Impact

Pair participants with jobs—first. AI Schools match each learner to a company and job even before training begins. Participants can then focus on the skills needed in the position they'll fill upon graduation, and companies participate in round-tables, workshops, and other employer activities throughout. This approach ensures the AI School can fulfill a big commitment to participants: They will have a paid apprenticeship once they're trained.

Tailor training to job descriptions. While everyone practices the same fundamentals, each participant customizes the skills they practice. This ensures learners are ready to perform jobs from data scientist to machine learning engineer after only seven months of initial training.

Connect funding to talent recruitment. Partnering companies, where learners will start as apprentices, directly fund the AI School. In fact, some companies exclusively fund an entire cohort and use it as an innovation hub. This financing model is more dependable than relying on grants.

Meet employers' soft skill needs. AI School staff work with companies to understand the intangibles that will help new hires thrive in their company culture. When a majority point to a given skill, such as agility, trainers develop lessons focusing on that. What's more, the school invites employers to give a workshop on the topic so learners absorb lessons directly from their future managers.

Instill self-reliance. During the training, participants follow a procedure when they're stuck on a problem: Try yourself, search the internet for an answer, ask a fellow participant, and only then seek help from a trainer. "Our learners are autonomous," Joly says. "It's one of the more appreciated soft skills from our partner companies."

Connect training and work. Simplon organizes meetings and informal lunches between students and their future employers and colleagues throughout the program. "We make a bridge from the companies to the learners," Joly says.



Offer certifications. At the end of the 12-month apprenticeship, participants take an exam on the skills required for a career in AI. When they pass, the French Ministry of Labour awards them a certification they can show to future employers. This national diploma is especially crucial to the majority of participants, who don't have a college degree.

Emphasize inclusion. People with disabilities are too often left out of opportunities in technology. The AI School is combating that trend by proactively seeking diverse students (e.g. by creating a neurodiverse school on the Microsoft campus in Paris, which will include 12 learners with Asperger's syndrome). Schools adapt to meet learners' needs, such as employing text-to-speech tools for those who are visually impaired and offering more independent projects for those with autism. As Beatrice Matlega, a philanthropies lead at Microsoft France, explains, "We know this is a great opportunity to create new jobs and foster diversity, which is key to develop powerful and unbiased technologies."

90% employment rate of participants who have completed the program

Microsoft is working with nonprofits to ensure every person has the skills, knowledge, and opportunity they need to succeed in the digital economy. Learn more aka.ms/skills-employability