



# Traineeship in Computer Science and Technology

## About us

In the Directorate General Information Systems it's our job to provide the ECB with the systems it needs to keep prices stable and safeguard the financial system.

We run and maintain more than 100 IT services, look after the ECB's IT governance frameworks and develop frameworks for the Eurosystem/European System of Central Banks.

We focus on delivering IT projects on time and in budget, maintaining stable IT operations, ensuring the highest levels of cybersecurity and resilience, and exploring innovative technologies with added business value.

## Who we look for

Every year we look for up to 23 trainees: innovation enthusiasts and business-savvy, students with a keen interest in IT or wanting to discover the ECB from the IT perspective.

The minimum you need is a completed bachelor's degree in (computer) science, engineering, business informatics or another technology-related field.

You can also apply if you graduated in another subject but with a curriculum including electives in science and technology.

## Our traineeship programme

Our traineeship programme gives you:

- a chance to immerse yourself in the ECB's IT and IT governance areas and gain first-hand experience of an department delivering high-quality IT services and projects;
- the opportunity to attend courses and interactive information sessions to gain a comprehensive understanding of the role of the ECB;
- individualised assignments taking your development needs into account;
- challenging tasks in which you can hone your analytical, technical and business skills;
- mentors and leaders willing to share their experience with you.

## Skills

You bring outstanding analytical skills and the ability to learn quickly.

You are self-motivated, pursue projects and tasks with energy and drive, and have good problem-solving abilities and a genuine interest in finding better ways to do things.

## Knowledge

Ideally, you have knowledge in one or more of these areas:

- information technology architecture
- database trends and applications; big data analytics and machine learning
- networks, telecommunications; cloud; wireless and mobility
- software/application development and management
- governance, project management and business administration
- risk management, security and information assurance.

## Your assignment

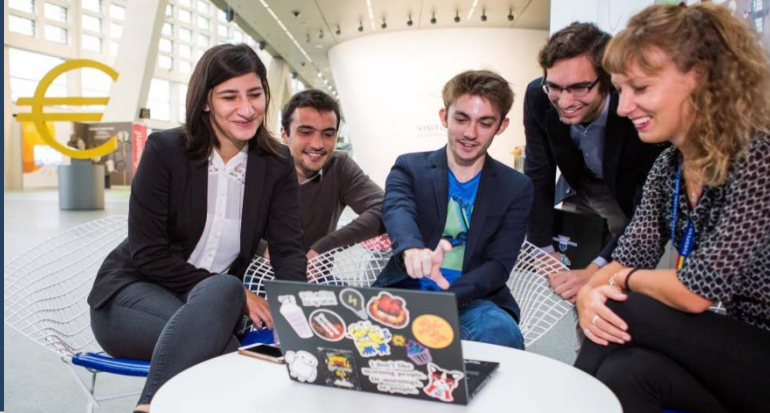
The content of the traineeship depends on the department you are assigned to, your interests and your skillset. You will be matched to a pathway in one of the following functional areas:

- infrastructure
- application development and service management
- digital security
- innovation and architecture
- governance.

You will be integrated into a team, and will attend meetings, conduct analysis, advise on decisions, research and compile documents and reports, work on pilots and test innovative solutions.

To find out more, speak to our staff at our virtual fair on Graduateland  
16 October 2019

# Some of our opportunities



## Innovation trainee

1. EUROchain and Project Stella are widening the horizons of central bank communities in the fields of cloud computing, distributed ledger technologies and machine learning. You will assess innovative technology and its potential use in the field of market infrastructure.

2. Our innovation team strives to make interaction with IT systems more efficient and user-friendly. The approach is very agile: implementing prototypes and pilots to quickly show or dismiss the usefulness of ideas in practice. You will help us looking into how:

- GPUs can boost machine learning performance;
- chat bots can address repetitive user queries;
- robotic process automation can increase productivity and where it can be applied;
- our technological landscape can evolve using cloud services and container orchestration.

## Business analyst trainee

3. You will support the requirement engineering for our Risk Analysis Reporting Tool, by defining datasets for risk management, interacting with users and creating user stories, and implementing a dashboard for reporting visualisation using Python, Tableau, SQL and Oracle.

## IT architect trainee

4. In architecture design you will conduct analyses and work with other architects developing enterprise architecture views (models) of the ECB IT landscape, technical standards and solution architecture designs. You will take part in (project) meetings and workshops with business customers, business analysts and technical experts, and subsequently create architecture models using the Archimate language with the ARIS tool.

## Data scientist trainee

5. The ECB, the European Systemic Risk Board and seven national central banks are delivering a large project on securities financing transactions (SFTs), i.e. transactions where securities are used to borrow cash or vice versa. This big data project will establish an end-to-end service to collect, process and make SFT data available for analysis. It will bring considerable transparency into the use of securities for financing operations of businesses across the euro area.

This is a great opportunity for you to prototype and apply data mining and machine learning techniques to a large and globally relevant dataset. Do you want to know more about Spark and learn how to fine tune and improve processing performance? Or do you have a keen interest in SFTs and want to work on one of the first projects of its kind in Europe? This project will give you the opportunity to develop both technical coordination and business analysis skills, but also to innovate and bring in fresh ideas.

## UX developer trainee

6. Transparency is crucial to the way the ECB operates. We are launching a new web portal to establish secure communication between the ECB, external institutions (banks) and the national authorities in charge of banking supervision. It will allow the direct sharing and collection of critical supervision data.

Join our Scrum team to implement user stories, program in Angular/Javascript, CSS and HTML, and develop a proof of concept to confirm the suitability of the solution to the customer. Working with a user experience expert, users and product owners, you will apply good software practices such as test driven development (TDD), continuous integration and continuous delivery.

## Service Optimisation trainee

7. You will help our infrastructure team to collect new information on independent systems. Your results in predictive analytics across platforms will help to identify root causes faster and enhance business insights.