

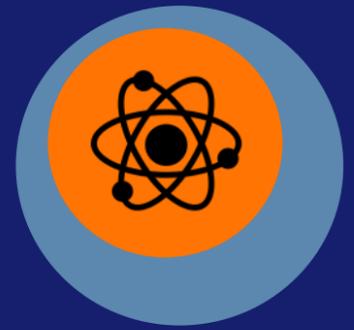


NEWSLETTER

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Don't miss out on key events to network, present your work or learn new things!
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We recommend you the best to **RE**ad, **A**nalyze and **L**isten to.
Discover the startup **AQEMIA** !
- **JOIN US!**





NEWSLETTER

The team BIOTechno AuRA is looking for volunteers



Le forum BIOTechno Auvergne Rhône-Alpes 2022 recrute sa nouvelle équipe !

Comme chaque année, le forum BIOTechno AuRA réunit les professionnels du monde de la recherche et les Doctorants et jeunes diplômés. Cette année encore, nous recrutons une nouvelle équipe de volontaires pour mener ce projet à terme. En tant qu'organisateur, c'est une formidable occasion de gérer un projet sous tous ses aspects allant de la recherche de partenariats pour financer l'évènement à l'organisation du forum (réservation du lieu, organisation des conférences, ...) tout en élargissant son réseau professionnel. Si vous êtes intéressés ou avez des questions, vous pouvez envoyer un email à forumbiotechno.ra@gmail.com.

FORUM
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RHONE-ALPES



Interview: From Immunology to Data Science

Hugo BOTTOIS

PhD in Immunology. Data Project Leader.
Data Analyst/ Scientist.

Could you give us a brief description of your background?

I did a PhD in immunology working with T-cells, mainly on inflammatory disease and also colorectal cancer. After my PhD, I was interested in programming, coding and data, so I attended classes and a bootcamp about data and also web development. I am currently data project manager in the research department of Capgemini Engineering, where I work on research projects.

How did you go towards the field of machine learning and data science?

I actually started quite early. During my PhD project, I was treating T-cells with different conditions and evaluating their response. At one point however, I thought that to better characterize them I should use bioinformatics. So I made a transcriptomic analysis from my cells on R, and this was when I started to make some code.



The bioinformatics and statistics that I used during my PhD were thus the beginning of my interest for this field. Then step by step, I took some courses and a bootcamp to learn to apply this to my research.

Based on your experience, what recommendations would you give to biologists wanting to learn to code?

I would say that the first thing to do, is to start. You can take online courses. There are actually many things you can do. You can go to conferences for example.



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Before Covid, I was going to conferences all the time because in Paris there are data and web conferences very often. You can also do a bootcamp. There are many different programming bootcamps on data, web or coding.

Another important thing that I would recommend, is to apply what you learn. If you only do online courses without practising, it is not going to be very good for you at the end. In fact, one of the best things to do is, if possible, to apply what you have learnt in your thesis project. In this way, you are learning to program during your thesis, and what you learn can be used for research.

Having a portfolio with projects you can show is also important. This can be projects from your thesis (publications), code you have written before, or results from hackathons.

The last thing I see you can do is an extra diploma. For example a master degree or an internship in a company (*contrat d'alternance* in France).

I have seen a lot of different ways people succeed in moving into the tech industry. For example, if at the end of the day you succeed in obtaining one job and you keep on learning, in one or two years you will have acquired a lot of experience. This will then enable you to be able to enter in the job field of programming and data.

Briefly, what is your day to day like in your current job?

Capgemini Engineering is a company where we send engineer consultants to different clients (from small to very big companies) in a wide variety of fields that range from aeronautics, automobile, transport and also healthcare.

I do not work directly with clients myself, but I work on internal research projects. I make collaborations with researchers specialized in medical images. They give me their needs and use cases and we provide them machine learning solutions.



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we additionally develop microservices and web interfaces so that they can apply such machine learning solutions in their clinical practice.

As a project manager, I coordinate a small team and some interns. My collaborators come from very different backgrounds, like data scientists and programmers, and I have to coordinate all the work people do for the project. In one of my projects for example, people help me build a machine learning model to classify a tumor based on images. Given an image, we want to know if a tumor is benign or malignant. We also help radiologists gain time by helping them detect tumors on images. For this project then, I have data scientists and some interns working on image classification and automatic detection of tumors. We then work on developing microservices and interfaces of this tumor classifier so that radiologists can use our machine learning model without our intervention.

I also interact with researchers, where we change a lot our approach to adjust to what could be useful for their needs.

Finally, I also try to communicate my projects and write research papers. I currently have a paper that has been submitted.

So overall, my job is a mix of project manager, research and tech.

5. How do you think the skills and technical knowledge acquired during your PhD help you on your current job position?

First of all, your PhD gives you a scientific background (in life sciences for example) which can be useful when you are reading papers about another field. My current research area is medical images, but on tumors, so I can understand the research papers I am reading.

Secondly, I think that you learn how to search for information correctly.



Interview: Professional Networking

Hugo BOTTOIS

**PhD in Immunology. Data Project Leader.
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Although it may appear as a cliché, you also learn how to optimize a protocol from trials and failures. This also occurs in programming where you try something new and iterate until you get the correct answer.

During your PhD you are also used to learning and adapting to new things. Doing your thesis enables you to become a good learner, which enables you to achieve goals.

6. How could a PhD from a life science background best sell himself or herself in the data science job market? What are the main things companies look for?

For the first question I would say, don't sell yourself too short. It is not because you were in academia and have never gone to industry before that you have to accept whichever condition. If you accept any condition this won't make you very competitive in regard to the recruiter.

[Watch the full interview online!](#)

To better sell yourself in the market you should select a company that is related in a way to the field you were doing your thesis in. For example a biotech that works in immunology or cancerology, where you would be more competitive than in another field.

In data science you always need a background in programming, statistics and mathematics. However, there is something called domain-competency. This is not always mastered by data scientists working on the project, but it is very important. For example I work with medical images yet on some images, I cannot even say where the image was taken from. So, I need expertise in this job, even if I am doing a data science job.

For the second question I think it really depends on what the company is doing. I would say however that they want to see how much you want to learn. One of the best things to do is to show that you are interested in the field and eager to learn (make a portfolio working with related data before applying for a job). Finally, be curious and follow online courses.



The HIV vaccine challenge

by Aura MORENO, BIOTechno Paris

Thirty years after the discovery of the Human Immunodeficiency Virus (HIV) as a causative agent for the Acquired Immunodeficiency Disease (AIDS), no licensed vaccine exists yet. **Development of an effective vaccine against HIV has been and still is one of the greatest scientific challenges** urgently needing to be solved. Among the reasons hampering the creation of a successful vaccine are HIV's special characteristics- its large genetic variability due to strong mutation rate, its fast integration into the human genome and its ability to evade our immune system.

Bringing hope to the field is the **new vaccine recently developed by the biotech company Moderna** in a collaborative project between the International AIDS Vaccine Initiative (IAVI) and the Bill and Melinda Gates Foundation (BMGF). Its Phase I clinical trial is set to start within the coming months.

Using the same technology as the vaccine developed against SARS-Cov-2, **the new experimental mRNA HIV vaccine aims at priming B cells to produce the HIV neutralizing antibodies bnAbs** (broadly neutralizing antibodies). Such antibodies were detected in 2009 in patients with long term HIV infection and have proven effective at impeding HIV from infecting and entering cells in the body. Most importantly, bnAbs have been shown to target many different HIV variants.

Being the first of its kind to reach human clinical trials, Moderna's mRNA HIV vaccine brings new hope into solving the HIV vaccine hurdle. Notwithstanding, with many years to come yet before an end is brought to one of the world's deadliest pandemic, **it will be key for research scientists, partners, advocates, governments and pharmaceutical industries to join forces if we want to neutralize HIV once and for all.**

<https://clinicaltrials.gov/ct2/show/NCT05001373>

<https://www.clinicaltrialsarena.com/news/moderna-hiv-vaccine/>

<https://www.smithsonianmag.com/smart-news/moderna-begin-human-trials-two-experimental-hiv-vaccines-180978521/>

Nguni e al 2020 Major Scientific Hurdles in HIV Vaccine Development: Historical Perspective and Future Directions. *Front. Immunol*



NEWSLETTER

Calendar of events

October

15

PhD Talent Career Fair**Date and time : 15th October****104 Paris (19^{ème}) - Registration – Fees see online (in English)**

For its 9th edition, the PhD Talent Career Fair brings together in Paris several thousands PhDs and PhD students wishing to pursue their careers in the private sector.

November

16-18

Les Post-Doctoriales ABG**Date and time : 16th - 18th November****Espace Hermès : 11 Cité Joly, 75011 Paris (métro Père Lachaise)****Registration until the 15th of October – Fees 150€ (in French)**

Vous êtes docteur ou post-doctorant? Vous vous interrogez sur la prochaine étape de votre carrière et l'envisagez en dehors du secteur académique ? Ne manquez pas la **prochaine session des Post-Doctoriales[®], organisée avec le soutien de la Ville de Paris, du 16 au 18 novembre 2021. Inscrivez-vous sans tarder (nombre de places limité) !!**

Critères de sélection : être titulaire du diplôme de doctorat ou être en fin de contrat postdoctoral (quelle que soit la discipline) ; priorité donnée aux docteurs domiciliés, ou travaillant à Paris (soutien de la Ville de Paris).



NEWSLETTER

Calendar of events

December

8-10

PhD what comes next – 2021 ?**Date and time : 8th - 10th December****On line - Registration – Fees 30€ (in English)**

Are you currently doing a PhD in France, Germany or Luxembourg or are in the framework of a joint program with these three countries? Have you just obtained your PhD and are you looking for a job in one of these three countries after your PhD?

Be part of this new online edition of “PhD, what comes next?”, the cross-border career workshop for PhD candidates that will be **organized on 8th-10th December** by [ABG](#), the [French-German University](#), the [Luxembourg National Research Funds \(FNR\)](#), the [Luxembourg Institute of Health \(LIH\)](#), the [Luxembourg Institute for Socio-Economic Research \(LISER\)](#), the [Luxembourg Institute of Science and Technology \(LIST\)](#), the [University of Luxembourg](#), [the Saarland University](#) and [the University of Trier](#).

It's the perfect opportunity to (finally) take some time to think about your professional identity, your wishes, to understand the recruitment process and recruiters' expectations in different countries, to discover a new career path and develop your network by meeting professionals...

The seminar is open to PhD candidates from all fields and all nationalities, doing their doctorate in France, Germany or Luxembourg (PhD candidates doing a joint PhD with one of the three countries or doing an industrial PhD are eligible), PhD holders who are unemployed or on a short term contract and who graduated less than 6 months before the start of the workshop. **The participants must be motivated to explore the opportunities outside academia and have a good level of English (at least B2).** Priority is given to advanced PhD candidates (i.e. from late 2nd year of their PhD onwards).



NEWSLETTER

Calendar of events

Evolving the idea of mentorship The-socialscientist.org



The Social Scientist

*A community of mentors **dedicated** to STEM professional development aiming to **break down barriers** to support diversity, equity and inclusion in STEM. With a virtual platform and global mentors, they provide guidance to **facilitate opportunities** in the fields, from students to CEOs.*



Our suggestions for the month

BIOTechno's REAL favorites



READ

[Docteurs, doctorants : futurs collaborateurs des TPE/PME et ETI](#)
Article publié sur le site de l'APEC en mai 2021

[The obvious path vs the right path: experts discuss the PhD career conundrum](#)

Published by Walid Yassin on Cell press website in 2019

[10 things NOT to do on your CV](#)

Published by Nadine Lewis on jobs.ac.uk



LISTEN

[IA et cancer, le diagnostic infallible ?](#)

Podcast issu de l'émission la Méthode scientifique sur France Culture par Nicolas Martin.

L'IA est-elle en passe de surpasser le médecin dans le dépistage, le diagnostic et/ou le choix de la meilleure thérapie dans le cancer dans ses diverses formes ? Quelles sont ces IA et quels sont leurs principes, leur logique? Sur quelles données se basent-elles et pour livrer quelles informations ?

[Working scientist](#)

Nature Careers podcasts



NEWSLETTER

Our suggestions for the month



Start-up on the Scene

AQEMIA

[Aqemia](#) is a spin-off start-up from the Ecole Normale Supérieure - PSL developing innovative technologies to create new molecules in the field of drug discovery.

Founded in 2019 by Maximilien Levesque and Emmanuelle Martiano, Aqemia's technology core is based on proprietary algorithms developed by Maximilien, who holds a PhD in Quantum Mechanics for Solid State Physics. Indicative of its bright future to come, in December 2020 Aqemia received support and funding from Sanofi to use its theoretical-physics-based technology to develop efficient molecules against COVID19.

JOIN US!



Volunteer Journalists

- Are **you involved in the organization of an event** interesting for young scientists and want to promote it ?
- Will you participate to one of these **events** and are willing to write a **review** afterwards for our newsletter ?
- Do you want to **signal an event** to add it to our calendar section ?
- Do you have **an idea for a content** that could fit in the BIOTechno newsletter ?

NEW ! Our website dedicated to the BIOTechno newsletters

<http://www.reseaubiotechnonewsletter.fr/>

Become a Partner of the BIOTechno Network!

Private Industry / Startups/ Institutions

In 2020, more than 30 private and institutional partners supported the BIOTechno network. You can also become our partner, get the opportunity to **meet young professionals with a solid scientific background** willing to develop their career in the biotechnology field. You will be able to **present your company to a targeted audience** during the BIOTechno events 2021 :

- **Monthly webinars** organized by the BIOTechno Paris team (biotechno.paris@gmail.com)
- **e-Forum** organized by the BIOTechno Auvergne-Rhône-Alpes team (forumbiotechno.ra@gmail.com)

You also have the opportunity to **publish job offers for your company** in our monthly newsletter. Your next talented employee is probably a member of the BIOTechno network !