

DERECK MEZQUITA MSC

DERECK'S PROJECTS

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Contents

Welcome 3

Showcase 3

Research and Publications 4

Find me 4

About 7

Education 9

Welcome

I began programming at age 15 and have since developed professional expertise in software and data engineering. My formal education includes an MSc of Bioinformatics in Systems & Synthetic Biology. This combination of long-term programming experience and scientific training enables effective work at the intersection of life sciences and advanced computing.

As an American raised in France, I possess native fluency in English, French, and Spanish, with additional fluency in Italian and Russian. This linguistic capability facilitates work in international scientific contexts. My professional focus includes high-performance computing, data infrastructure development, and scientific software creation. I specialise in transforming complex scientific and financial problems into data-driven solutions.

This website serves as my scientific digital fingerprint. I hope here to present here my open source work.

Showcase

[Dereck's Notes](#)

Dereck's Notes¹ began in 2017 as a personal project, an attempt to integrate and condense everything I had learned in university. I have always been a prolific note taker, and I wanted to create a platform to share my knowledge with others. The project has since evolved into a knowledge distribution platform, scientific dictionary, scientific journal, and blog.

¹ [Dereck's Notes GitHub Repo](#)

Early versions were in PHP, version 4.0 of the project demonstrates a modern technical stack to integrate advanced features and improve maintainability. I strongly focused on a polished frontend and backend, as well as strong DevOps + CI/CD.

Key technical aspects:

- Frontend: Next.js 14 (app dir), React, TypeScript, MDX
- Backend: Express, Mongoose, Redis
- Infrastructure: Nginx, Linode, MongoDB, Redis
- CI/CD: GitHub Actions, Docker

Notable features:

- User account functionality
- Interactive commenting system
- Blog post filtering
- Dictionary search functionality

Research and Publications

My scientific research focuses on applying bioinformatics, statistics, and high-performance computing to address complex scientific problems. Key areas of study include rheumatoid arthritis, breast cancer, and broader investigations in genomics, metabolomics, and proteomics.

Notable publication:

- [Metabolomic Rewiring Promotes Endocrine Therapy Resistance in Breast Cancer](#) (Cancer Research, 2024)
- [Inference of an integrative, executable network for rheumatoid arthritis combining data-driven machine learning approaches and a state-of-the-art mechanistic disease map](#) (Journal of Personalized Medicine, 2021)

These publications exemplify my approach to leveraging computational methods for advancing understanding in life sciences. For a comprehensive list of my research contributions, please refer to my [Google Scholar profile](#).

Find me

- derecksnotes.com

- GitHub:
 - github.com/dereckmezquita
 - github.com/dereckprojects
- [LinkedIn](#)
- [Google Scholar](#)
- [YouTube](#)

About

I am a bioinformatician and software engineer with expertise in creating data infrastructures, developing scientific software, and applying advanced computational methods to complex biological problems. I began programming at 15 and have since developed a strong foundation in life sciences and computational methods, this has culminated in a rewarding academic and professional career.

I love to learn and work on personal projects. I am a polyglot; native in English ☐☐, French ☐☐, and Spanish ☐☐ I am also fluent in Italian ☐☐ and I speak Russian ☐☐. My personal interests range from combat sports to high-performance robotics and hardware.

Education

My academic background provides a strong foundation in both life sciences and computational methods:

1. MSc Systems & Synthetic Biology; Bioinformatics
 - Université de Paris-Saclay, France (2019 - 2020)
 - Degree obtained
 - University ranking: 1st in France, 14th world-wide
2. MSc Molecular Microbiology & Biotech
 - Université de Toulouse III, France (2018 - 2019)
 - Continuing education
 - University ranking: 10-13th in France, 201-300th world-wide
3. Medicinal & Pharmaceutical Chemistry
 - Université d'Angers, France (2014 - 2018)
 - Continuing education
4. BSc Cellular/Molecular Biology & Physiology
 - Université d'Angers, France (2014 - 2017)
 - Degree obtained
 - University ranking: 33-35th in France, 901-1000th world-wide

This diverse educational background, combined with years of practical programming experience, enables me to work effectively at the intersection of life sciences and advanced computing.

Acknowledgements

Many thanks to my parents for having supported me throughout my studies, for having instilled a sense of curiosity and grandiosity.

