

# Miguel Morin, PhD

Professor, published scientist, and entrepreneur  
Ph.D. in Economics (Columbia University, 2014)  
M.A. in Statistics (ENSAE, 2008)  
B.Sc. in Computer Science (Polytechnique, 2007)  
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right to work: EU (birth); UK (settled status)

## Summary

I work as a professor of software engineering and data analysis; and also as an entrepreneur and inventor in education and technology. Previously, I worked as a [published scientist](#) in economics (Columbia University, University of Cambridge) and as a software developer (Alan Turing Institute) with contributions to open-source code ([R package](#), [TensorFlow documentation](#)). I also have experience in early childhood education, film-making, audio and video production, Python, NodeJS, TensorFlow, web development (HTML, JavaScript, and CSS), and graphic design.

I founded and work on [Surfeel / Ginja](#), a social-and-emotional learning program based on videos and songs that explains emotions to 4-7 year olds. I work on improving the product and talking to clients to find product-market fit.

I have lived, studied, and worked in different countries (Portugal, France, United States, United Kingdom); I am fluent in several languages (native in English, French, and Portuguese; intermediate in Spanish and German), and my professional experience spans academia, start-ups, and the technology industry.

## Work experience

**Professor, [Columbia Business School](#) (New York, USA, September-December 2024):** I taught the PhD-level course “Computing for Business Research” in the Masters of Science in Finance and Economics, Masters of Science in Accounting and Fundamental Analysis, and Masters of Science in Marketing. I innovated in the course with an “Auto-grader”, which graded students’ assignments and exams in real-time. The student evaluations had 86% response rate and course/instructor ratings of 3.3-3.4 (1 is strongly negative, 3 is neutral, 5 is strongly positive).

**Entrepreneur, [Surfeel / Ginja](#) (Portugal and the UK, June 2020-present):** Surfeel makes educational products that help children and teenagers decipher emotions. The flagship product is a fun children’s series loved by school psychologists. It is the only complete program in Portuguese with videos and songs. It helps children verbalize emotions, overcome fears, and heal trauma. For example, one child with selective mutism started speaking during our sessions; one 4-year old with brain leukemia stopped being afraid of needles; and two children revealed their child abuse at home (domestic violence and sexual abuse) and were brought to safety. I co-wrote the episode scripts, recorded and produced the audio and the video, designed and programmed the web application in NodeJS, and ran the company full-time until it reached saturation in the Portuguese school market in December 2022. I still run the company part-time.

**Freelance data analysis and AI consultant (worldwide, remote, January 2023-present):** I help start-ups and scale-ups extract value from their large, high-quality data. Their problem is often that they lack the expertise to analyze such data, but cannot commit to a full-time person for such projects either. The methods I used include: natural language processing, neural networks, linear and non-linear regression, classification and regression trees (CART), nearest neighbors, support vector machines, TensorFlow, PyTorch and reinforcement learning. Deliverables include high-quality, production code in Python with doc-tests for regression testing. Successful assignments yielded a 10x improvement in speed of data ingestion.

**Entrepreneur, [CoVoucher20](#) (Portugal and the UK, March-May 2020):** CoVoucher20 was an initiative to support local businesses during lockdowns. Customers anywhere in the world could buy vouchers

to use later and support their favorite establishments so they could pay fixed costs like rent and utilities and better weather the crisis. The project was a spectacular failure and a good learning opportunity because the launch took 3 weeks and many similar projects all over the world launched earlier, were local and thus closer and more relevant to their businesses.

**Entrepreneur, Puzzli (Portugal and the UK, 2019-2020):** Puzzli is a “smart toy” that I invented to teach 2-5 year olds to read and write while having fun. I filed a [patent](#) for it, worked on the product at the Cambridge Makespace, and talked to clients. Due to the supply chain disruptions from the covid pandemic, the significantly lower income for families and schools, and the difficulty of starting a hardware company, this project is on indefinite hold. I shall resume it when the time is right, because I have made it my life’s mission to provide high-quality, low-cost early childhood education.

**Research Software Engineer, The Alan Turing Institute (London, 2018-2019):** I turned researchers’ software into high-standards code for publication, e.g. the [Posterior Bootstrap parallel sampling scheme](#), [accepted by CRAN](#). I also investigated machine learning algorithms and wrote a paper about the variation in deep learning algorithms being 50% stochastic (“[Non-Determinism in TensorFlow ResNets](#)”).

**Postdoctoral research Associate, The Alan Turing Institute (London, 2017-2018):** I held a Postdoctoral Research Associateship in Economics and Data Science for one year. I worked closely with HSBC and discuss the results with senior science and business stakeholders at HSBC and at The Alan Turing Institute. I converted research software from closed-source Stata to open-source Julia for an academic revision (public [GitHub repo](#)). I also coded a research project in R for the inference of network structures from panel data (private repository on GitHub).

**Postdoctoral research associate, University of Cambridge (UK, 2014-2017):** I was a Postdoctoral researcher in the Faculty of Economics over 2014-2017, working on economic history and early childhood education. I wrote research software in Stata for revisions of my doctoral dissertation and designed an early childhood literacy intervention. I also lectured for 1st-year Macroeconomics (2014-2017), 3rd-year Macroeconomics (2015), and PhD-level course on data analysis (2015).

**Lecturer, University of Cambridge, Faculty of Economics (2014-2016):** I taught 1st-year Macroeconomics (three times, 150 students), 3rd-year Macroeconomics (once, 40 students), and PhD-level course on data analysis (twice, 10 students) over 2014-2016. Student feedback available upon request.

**Supervisor, Trinity Hall College, University of Cambridge (2014):** I supervised a group of 3 students for 3rd-year Macroeconomics.

**Teaching Assistant, Department of Economics, Columbia University (2009, 2012):** I taught the breakout sessions of Intermediate Macroeconomics and Principles of Economics (2009 and 2012).

**Research assistant, Columbia University (2007):** I did an internship with a team of two academic researchers working on a [paper on partial identification](#). They wanted a database of prices to test the econometric theories of multiple equilibria in price competition. I designed and coded a tool in C# and .NET that scraped prices and details of every flight to and from every US airport and compiled them into a CSV file.

**Association for Computing Machinery (ACM) competition (2006):** I participated in the [South Western Europe Regional Association for Computing Machinery \(ACM\) Programming Contest 2006](#) in Lisbon in 2006 with a team of 3 from Ecole Polytechnique, coding in Java. One problem involved prime numbers and our first algorithm failed to process the inputs in the required time. We divided the effort and my task was to speed up the code while they worked on the next problem. I refactored the code to compute a list of all prime numbers up to a certain limit using the Erathostenes sieve. This change brought the algorithm below the threshold, the algorithm was correct, and we got a balloon.

## Education and honors

**Columbia University (New York):** Economics, Ph.D.; 2014. Thesis: “General Purpose Technologies: engines of change?”

**Wueller prize, Columbia University (\$2,334):** winner of the best dissertation proposal (2011).

**Vickrey prize, Columbia University (\$750):** runner-up for the best paper of a third-year PhD student, 2011.

**Harris prize, Columbia University (\$1,375):** winner of the best paper by a second-year PhD student, 2010.

**Ecole Nationale de la Statistique et de l'Administration Economique (Paris):** Statistics, M.A.; 2009. This school is a top tier French engineering schools and is the branch school of Ecole Polytechnique (see below) for statistics, data science and machine learning.

**Ecole Polytechnique (Palaiseau):** Computer Science, B.Sc.; 2008. Ecole Polytechnique is the [#1 engineering school in France](#) with a highly selective entry process.

**Bento de Jesus Caraça Prize (€3,000):** winner of the prize for the best paper by a high school student on the theme “complex logarithms” ([link to Portuguese press release, in Portuguese](#)).

## Funding and awards

**Hayek fund for scholars grant (\$400):** conference travel, 2015.

**Russell Sage Presidential Authority Award (\$23,000):** (with Rowena Gray, UC Merced), funding for the project “Technological Revolutions and Occupational Change” (2015).

**Arthur H. Cole grant (\$5,000):** grant to support post-doctoral research, 2015.

**Keynes Fund, University of Cambridge (£20,000):** grant to digitize the Census of Manufactures during the Great Depression (2014-2015).

**Corpus Christi College, University of Cambridge:** College Research Associate, 2014-2017.

**Doctoral fellowship, Columbia University (\$60,000):** PhD fellowship, 2008-2009 and 2014.

**Program for Economic Research, Columbia University (\$8,000):** grant from Columbia University to digitize the Census of Manufactures during the Great Depression, 2013.

**Fundação para a Ciência e Tecnologia, Portugal (€132,000):** Doctoral fellowship, 2010-2013.

**Bento de Jesus Caraça Prize (€3,000):** Prize for the best math paper by a high school student, 2003.

## Academic publications and working papers

**“Does electricity drive structural transformation? Evidence from the United States”:** (2020), Labour Economics. With Paul Gaggl, Rowena Gray, and Ioana Marinescu.

**“Non-Determinism in TensorFlow ResNets”:** (2019), ArXiv. With Matthew Willetts.

**“Tablet language stimulation and sight-reading applications to narrow toddlers’ literacy gap”:** (2016, with Sriya Iyer, ethics approval granted).

**“The Effect of Infrastructure Investment in a Low-Growth Environment: Evidence from the Great Depression”:** (2016, with Scott Swisher). *Invited presentations: in 2015 and 2016 at the Keynes Fund Research day.*

**“The labor market consequences of technology adoption: concrete evidence from the Great Depression”:** (2015). Revision Requested at American Economic Journal: Macroeconomics. *Media coverage: Financial Times (behind paywall), Marginal Revolution, European Economic Association, Vox.* *Invited presentations in 2014: Economic History Association conference, Instituto Superior de Economia e Gestão (Lisbon), Center for Macroeconomics (London and Cambridge), Faculty of History (University of Cambridge); and in 2015 at Economic History Society Meetings (Wolverhampton), Royal Economic Society Meetings (Manchester), NBER Summer Institute (Boston), Econometric Society World Congress (Montréal), European Economic Association Meetings (Mannheim).*

**“Computer Adoption and the Changing Labor Market”:** (2014). Reject and Resubmit at Review of Economic Dynamics. *Media coverage: Marginal Revolution.* *Invited presentations in 2013-2014: Midwest Macroeconomic Meetings (University of Illinois at Urbana Champaign), Instituto Superior de Economia e Gestão (Lisbon).*

**“How should the graduate economics core be changed?”:** (2010). The Journal of Economic Education. With Abito, J. M., K. Borovickova, H. Golden, J. Goldin, M. A. Masten, A. Poirier, V. Pons, I. Romem, T. Williams, and C. Yoon.

## Programming Languages and “DevOps”

**NodeJS:** I programmed multiple websites in NodeJS, including my current website, [www.surfeel.org](http://www.surfeel.org), because of its fast response cycle and Mongoose interface to MongoDB, a NoSQL database, well-suited for rapid prototyping of Minimum Viable Products for startups.

**Python:** I am a proficient user with libraries such as `scikit-learn`, `numpy`, `pandas`, `tensorflow`, `pytorch`, `OpenCV`, `BeautifulSoup`, `nlTK`, and `re`.

**AWS:** I am a proficient user of the following Amazon Web Services: LightSail, Elastic Compute Cloud (EC2), CloudWatch, Simple Email Service (SES), Simple Notification Service (SNS).

**Command-line, Unix, and bash/zsh:** I am a proficient user of Bash/Zsh scripting and the command-line in a Unix environment.

**Java:** I was an advanced user over 2005-2007 during my university degree and for the Association for Computing Machinery (ACM) competition.

**C#:** I was an advanced user over 2007-2009 during my work for Amarile and Columbia University.

## Hobbies

**Paragliding, gliding, and flying** I enjoy flying small aircraft like a paraglider, for which I have a pilot’s license, and a glider (a plane without a motor).

**Social activities** I ran the Turing Social Committee for two years (2017-2019) with activities like book club, chess club, circus skills, games night, crochet club, and feelings club.

**Improvised comedy (“*Improv*”)** I attended, led, and performed in several improvised comedy events in London and Cambridge. The guiding principle is saying “yes, and” to other people’s ideas, and as such it improves teamwork.

**Invention, bricolage, arts, and crafts** I enjoy making, repairing, and inventing new things in “makespaces” or “fablabs” with machines such as laser cutters, Computer-Numerical-Control (CNC) routers, and 3D printers. Some of my designs are on [Thingiverse](https://www.thingiverse.com/), made at the Cambridge [MakeSpace](https://www.makespace.cam.ac.uk/)