

# Dany Majard | Data Scientist

Globally Mobile – France

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*Versatile mathematician excelling in research and customer satisfaction with a proven track record of leadership, initiative, autonomy and adaptability. Eager to shine as a data scientist, creating impact through analytics, creativity and wisdom.*

## Projects

### Blight in Detroit // Binary classification

Capstone Project

*Geolocation, NLP, webscraping (python, pandas, sklearn)*

Nov 2017

Using blight violation tickets and parcel data from Detroit Open Data to predict blight in the city, which is a major problem the city is facing. Extensive EDA and cleaning was needed for models to make factual sense and prevent harmful bias.

### Corporacion Favorita stores // forecasting

Kaggle Competition

*Time series, feature engineering, clustering (python, pandas, sklearn)*

Jan 2018

Top 10 Kernel - Using 5 years of sales data across 52 stores of the ecuadorian chain, the goal was to predict sales for optimal stocking. I used unsupervised machine learning to create a cluster feature for a gradient boosting regressor.

## Education

### University of Washington

Coursera.com

*Specialization "Data Science at Scale"*

Sept-Nov 2017

R, Python, SQL, NoSQL, Distributive processing (Pig on Hadoop), Machine Learning, Vizualization principles, Ethics

### University of Michigan

Coursera.com

*Specialization "Applied Data Science with Python"*

Sept-Oct 2017

Exploratory Data Analysis, NLP (Natural Language Processing), Text Mining, Social Network Analysis, Machine Learning

### John Hopkins University

Coursera.com

*Specialization "Data Science"*

Aug 2017-

R with the tidyverse, data cleaning, exploratory data analysis, reproducibility.

### Dept. of Mathematics, Kansas State University

Manhattan, KS, USA

*PhD, Mathematics*

June 2012

**Thesis** Cubical categories, TQFTs and possible new representations for the Poincare group

**Supervisor** Louis Crane

**Award** Hostinsky Outstanding GTA in Academics

**Abstract** This thesis contains a reformulation of Topological Quantum Field Theories of cobordisms with corners as higher cubical categories. It also investigates cubical categories as a gate to better formulating the coherence conditions for n-categories. Moreover it gives examples of double groups that are of significant importance for theoretical physics.

### CPT, Universite Aix-Marseille II

Luminy, France

*MSc, Theoretical, Mathematical and Particle Physics*

June 2006

**Thesis** 2nd Quantization of Colored Particles : Quest for the appropriate structure

**Supervisor** William Joyce, University of Canterbury, Christchurch, NZ

**Abstract** We adress the need for expansion of the parastatistics of quarks to  $\text{Rep}(SU_3)$  accomodating its  $Z_3$  grading, leading to creation/anihilation "algebras" stemming from premonoidal categories. The emerging structure is a generalization of Lie algebras to weakly-associative tensor products that we named Rainbow algebras.

### IUT de Reims

Reims, France

*DUT Mesures Physiques*

June 2001

**Specialization** Materials and physico-chemical controls

**Internship** AFICA - Metal Refinery. Developed protocols for the Atomic Absorption Spectrophotometer of the incoming material chemistry lab, then ran the lab for 3 month before mentoring a technician for replacement.

## Experience

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### Vocational.....

#### **Festka s.r.o. (cycling/luxury)**

**Prague, Czechia**

*Director of sales & customer relations*

*2014-2016*

- Voluntarily left in excellent standing with a track record of success.
- Increased sales by 400% by establishing a global distribution network of 24 partners.
- Created a sales analytics and models tools with scripts on google sheets.
- Partnered with Pipefy.com on deployment of their kanban platform to our manufacturing processes.
- Excelled in customer care, with a satisfaction rate superior to 98%.

#### **Masaryk University**

**Brno, Czechia**

*Post-doctorate Fellow*

*2012-2014*

- Continued work on own research program on higher cubical category theory and higher cubical groups.
- Developed and taught a course on graphical calculus and monoidal categories.
- Gave talks in many prestigious universities, including Cambridge and Oxford.
- Organized weekly meetings for research updates and brainstorming.

#### **Kansas State University**

**Manhattan, KS, USA**

*Graduate Teaching Assistant*

*2007-2012*

- Mentored undergraduate research.
- Taught and graded Plane Trigonometry, College Algebra and Calculus, Elementary Differential Equations and Applied Matrix Theory
- Coordinated Plane Trigonometry

### Other.....

#### **Personal Journey**

**Asia/Pacific**

*Travels*

*Jan-July 2017*

- Rode a 2500+ km unassisted solo cycling trip in Thailand and Australia and competed in the AHBPC 2017.
- Visited the Tibetan gov in exile to explore opportunities teaching modern sciences to buddhist Monks and Nuns.
- Visited Djalu Gurruwiwi, elder of the Galpu clan in Arnhem Land, Australia, guardian of 60000+ years of wisdom.
- Attempted mobile app development, coded in C# on Xamarin.

#### **EHBA - European Hardcourt Bikepolo Association**

**Europe**

*Founding Board Member, Head*

*2014-2016*

- Developed the structural foundations of the organization.
- Maintained communication with the North American and Pacific organizations.
- Restructured EHBA around 6 poles of development, each with a 2 year mission statement before resigning.

## Languages

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#### **French**

Native

#### **English**

Fluent

#### **Japanese**

Beginner

#### **Czech**

Beginner

#### **German**

Beginner

## Interests

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**Sport:** Played Hardcourt Bikepolo at an international level with Prague's based "Golem". Acroyoga practitioner

**Board Games:** Great way to sharpen analytic and social skills. Regular volunteer for Stronghold publishing.

## Publications

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#### **Recursive Internalization I, II & III**

*Series of papers on the generation of weak higher cubical categories*

*Ongoing*

#### **N-tuple groupoids and optimally coupled factorizations**

*Theory and Applications of Categories, Vol. 28, No. 12, 2013, pp. 304–331*

*2013*

#### **N-tuple groupoids and matched n-tuple of groupoids**

*arxiv.org/abs/1201.0059*

*2012*

#### **On Double Groups and the Poincaré group**

*arxiv.org/abs/1112.6208*

*2011*