

# Abdelhamid Ezzerg

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## EXPERIENCE

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### Fimatix

Jan 2024 – Aug 2024

#### Data Scientist

London, United Kingdom

- Extracting information from unstructured data.
- **Key responsibilities:** Design, implement and evaluate models./ Deploy scalable models into production./ Decide the next research directions.
- **Keywords:** Deep Neural Networks, Natural Language Processing, Question Answering...

### Amazon

Feb. 2018 – Jun. 2023

#### Applied Scientist

Cambridge, United Kingdom

- Applying Machine Learning to Amazon's Alexa Text-to-Speech.
- **Key responsibilities:** Design, implement and evaluate models./ Propose new research directions./ Efficiently report research findings through internal reports and external publications.
- **Keywords:** Deep Neural Networks, Speech Synthesis, sequence-to-sequence modelling, Variational Auto-Encoders, Generative Adversarial Networks, Normalizing Flows...

### AXA Data Innovation Lab (DIL)

May. 2017 – Oct. 2017

#### Intern Data Scientist

Paris, France

- **Key responsibilities:** Design, implement and evaluate models.
- Implemented a graph-based model to detect insurance policy fraud. The graph-based model achieved significant improvements to the absolute accuracy score.

### IBM

Oct. 2016 – Mar. 2017

#### Part-time Data Scientist

Paris, France

- Worked in a two-student group to construct a Machine Learning model capable of detecting credit card fraud. The proposed model significantly outperformed a rule-based baseline.

## EDUCATION

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### Ecole Centrale Paris (currently known as CentraleSupélec)

Sep. 2014 – Dec 2017

#### M.Sc in Applied Mathematics

Paris, France

- **Coursework:** Probability, Statistics, Numerical Methods, Partial Differential Equations, Functional Analysis, Programming...

### ENS Paris-Saclay: Ecole Normale Supérieure Paris-Saclay)

Sep. 2016 – Dec 2017

#### Research M.Sc in Applied Mathematics and Machine Learning (MVA)

Paris, France

- **Coursework:** Deep learning, sparsity and compressed sensing, statistical learning, reinforcement learning...

### University of Cambridge (Department of Engineering)

Oct. 2015 – Jun 2016

#### Erasmus exchange program

Cambridge, United Kingdom

- **Coursework:** Software Engineering and Design, Computer and Network Systems, Signals and Systems, Thermodynamics...

## Publications

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- Jakub Mosinski, Piotr Bilinski, Thomas Merritt, **Abdelhamid Ezzerg**, Daniel Korzekwa: *AE-FLOW: Autoencoder Normalizing Flow*. ICASSP 2023
- Guangyan Zhang, Thomas Merritt, Manuel Sam Ribeiro, Biel Tura Vecino, Kayoko Yanagisawa, Kamil Pokora, **Abdelhamid Ezzerg**, Sebastian Cygert, Ammar Abbas, Piotr Bilinski, Roberto Barra-Chicote, Daniel Korzekwa, Jaime Lorenzo-Trueba: *Comparing normalizing flows and diffusion models for prosody and acoustic modelling in text-to-speech*. INTERSPEECH 2023.
- **Abdelhamid Ezzerg**, Thomas Merritt, Kayoko Yanagisawa, Piotr Bilinski, Magdalena Proszewska, Kamil Pokora, Renard Korzeniowski, Roberto Barra-Chicote, Daniel Korzekwa. *Remap, warp and attend: Non-parallel many-to-many accent conversion with Normalizing Flows*. IEEE Speech Language Technology Workshop (SLT) 2022.
- Piotr Bilinski, Thomas Merritt, **Abdelhamid Ezzerg**, Kamil Pokora, Sebastian Cygert, Kayoko Yanagisawa, Roberto Barra-Chicote, Daniel Korzekwa. *Creating New Voices using Normalizing Flows*. INTERSPEECH 2022.
- Magdalena Proszewska, Grzegorz Beringer, Daniel Sáez-Trigueros, Thomas Merritt, **Abdelhamid Ezzerg**, Roberto Barra-Chicote. *GlowVC: Mel-spectrogram space disentangling model for language-independent text-free voice conversion*. INTERSPEECH 2022.
- Thomas Merritt, **Abdelhamid Ezzerg**, Piotr Bilinski, Magdalena Proszewska, Kamil Pokora, Roberto Barra-Chicote, Daniel Korzekwa. *Text-free non-parallel many-to-many voice conversion using normalising flows*. International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2022.
- **Abdelhamid Ezzerg**, Adam Gabrys, Bartosz Putrycz, Daniel Korzekwa, Daniel Saez-Trigueros, David McHardy, Kamil Pokora, Jakub Lachowicz, Jaime Lorenzo-Trueba, Viacheslav Klimkov. *Enhancing audio quality for expressive Neural Text-to-Speech*. Accepted for publication in the Speech Synthesis Workshop (SSW) 2021.
- Raahil Shah, Kamil Pokora, **Abdelhamid Ezzerg**, Viacheslav Klimkov, Goeric Huybrechts, Bartosz Putrycz, Daniel Korzekwa, Thomas Merritt. *Non-Autoregressive TTS with Explicit Duration Modelling for Low-Resource Highly Expressive Speech*. Accepted for publication in the Speech Synthesis Workshop (SSW) 2021.

## Honors and awards

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- French government's Major Excellence scholarship. I was awarded a scholarship for my admission to Ecole Centrale Paris.
- Ranked 2nd in the national Baccalaureate exams in Morocco in the Applied Mathematics B option.
- Ranked 5th in the national Olympiads of Physics, Morocco.

## SKILLS

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**Languages:** Arabic (native), French (native), English

**Programming languages:** Python, Scala, R, C++

**Deep Learning Frameworks:** Pytorch, MXNet

**Tools:** L<sup>A</sup>T<sub>E</sub>X, MS Office, Matlab, SQL

**Relevant skills/knowledge:** Probability, Statistics, Machine Learning, Deep Learning, Programming

**Familiar Deep Learning concepts:** sequence-to-sequence modelling (including Transformers), Variational Auto-Encoders, Generative Adversarial Networks, Normalizing Flows, Diffusion models...