

# Aissatou Diallo

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## EXPERIENCE

### Postdoctoral Researcher in NLP & ML

March 2022 – Present

*University College London*

*London, UK*

- Led the development of datasets for commonsense reasoning in LLMs and co-authored research on repurposing theory in AI.
- Published findings on AI's role in commonsense reasoning for disaster management, contributing to both academic knowledge and practical applications.

### Machine Learning Engineer Intern

April 2017 – October 2017

*Credit Agricole SA*

*Paris, France*

- Developed and deployed NLP-driven tools for classifying 1630 cybersecurity vulnerabilities, achieving a 90% accuracy rate and reducing manual workload for risk assessment by 40%.
- Implemented an automated system to generate audit report summaries, reducing preparation time by 50% while maintaining 90% accuracy in capturing critical data.
- Collaborated with a cross-functional team to integrate machine learning models into financial audit systems, enhancing real-time analytics capabilities.

## SKILLS

**Languages :** Italian (native), French (native), English (fluent), Spanish (C2), German (B1)

**Research Interests :** NLP, ML, AI, Commonsense Reasoning, Analogical Reasoning, Optimization, ML for social good.

**Research Tools:** Pytorch, Python, Git, GPU/CUDA, docker

**Reviewing:** ICLR, NeurIPS, AISTATS, AAAI (2022-2025), EMNLP 2023, ECAI 2024, ECML 2022

## SELECTED PUBLICATIONS

### 2024 |

- Rule-Guided Feedback: Enhancing Reasoning by Enforcing Rule Adherence in Large Language Models, under review. - A. Bikakis, A. Diallo, L. Dickens, A. Hunter, R. Miller
- *A Graphical Formalism for Reasoning about Substitution in Resource Transforming Procedures*, under review. - A. Bikakis, A. Diallo, L. Dickens, A. Hunter, R. Miller
- *PizzaCommonSense: Learning to Model Commonsense Reasoning about Intermediate Steps in Cooking Recipes*, EMNLP 2024 (Findings). - A. Diallo, A. Bikakis, L. Dickens, A. Hunter, R. Miller
- IAO prompting: Forcing Large Language Models to Show their Reasoning through an Input-Action-Output Template, under review. - A. Diallo, A. Bikakis, L. Dickens, A. Hunter, R. Miller
- RESPONSE: Evaluating Commonsense Reasoning about Disaster Management, under review. - A. Diallo, A. Bikakis, L. Dickens, A. Hunter, R. Miller

### 2023 |

- *A Commonsense Reasoning Framework for Substitution in Cooking* under review for Data & Knowledge Engineering - A. Bikakis, A. Diallo, L. Dickens, A. Hunter, R. Miller
- *Unsupervised Learning of Graph from Recipes*, preprint. - A. Diallo, A. Bikakis, L. Dickens, A. Hunter, R. Miller

### 2019 - 2021 |

- *Learning Ordinal Embedding from Sets*, Entropy 2021. - A. Diallo, M. Zopf, J. Furnkranz
- *Permutation Learning via Lehmer Codes*, ECAI 2020 - A. Diallo, M. Zopf, J. Furnkranz
- *Learning Analogy-Preserving Sentence Embeddings for Answer Selection*, CoNLL 2019 - A. Diallo, M. Zopf, J. Furnkranz

## EDUCATION

### TU Darmstadt

Darmstadt, Germany

*Ph.D. in Computer Science – Magna cum Laude*

*August 2018 - July 2022*

### CentraleSupélec

Gif-sur-Yvette, France

*M.Sc. in Computer Engineering – GPA: 4.0/4.0*

*September 2015 - October 2017*