# Eliseo Bao

Ph.D. Student in Computer Science

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scholar.google.com/citations?user=evKkNoMAAAAJ

## Research Interests

- **NLP for Mental Health** — detecting and explaining depression-related symptoms in social media using clinical frameworks such as the DSM-5 and BDI-II.
- **Explainable AI** — developing interpretable methods and clinically grounded explanations for mental-health assessment.
- **Conversational AI** — building conversational agents that support clinicians in reviewing and assessing mental-health information.
- **Persona Simulation and Evaluation** — evaluating how faithfully LLM-based personas simulate real users for mental-health research.
- **Multilingual NLP** — adapting language models to underrepresented languages, including Galician.

## Education

**University of A Coruña**, Ph.D. in Computer Science – Galicia, Spain 2024 – present

**University of A Coruña**, M.Sc. in Computer Science – Galicia, Spain 2024

- Extraordinary Master's Award, 2023/2024 cohort.
- Master's thesis awarded highest honors (Matrícula de Honor).

**University of A Coruña**, B.Sc. in Computer Science – Galicia, Spain 2022

- Bachelor's thesis awarded highest honors (Matrícula de Honor), 9.5/10.

**IES San Clemente**, Tech. in Application Development – Galicia, Spain 2018

## Experience

**Predoctoral Fellow**, Universidade da Coruña 2024 – present

- Xunta de Galicia Predoctoral Grant ED481A-2024-079.

**Visiting Researcher**, Natural Language Processing Group, University of Sheffield – Sheffield, UK Oct 2025 – Dec 2025

- Hosted by Dr. Xi Wang; work on LLM persona simulation led to the Eval4Sim paper (CIKM 2026).

**Research Assistant**, CITIC Centro de Investigacion TIC - Universidade da Coruña 2023 – 2024

- Working at the Information Retrieval Lab (IRLab) within the project PLEC2021-007662 Big-eRisk Early Prediction of Personal Risks on Massive Data funded by MCIN/AEI/10.13039/501100011033 and by the European Union NextGenerationEU/PRTR.

**Internship**, ITG Instituto Tecnológico de Galicia 2022 – 2023

- Contributed to the CEL.IA group, developing NLP solutions, with a focus on the ASR research line.

**Apprenticeship**, NATICA, SISTEMAS DE INFORMACION SL 2018 – 2018

## Publications

**Eval4Sim: An Evaluation Framework for Persona Simulation** Nov 2026

Introduces a three-dimensional framework (adherence, consistency, naturalness) for evaluating how well LLM personas simulate human conversation.
**Eliseo Bao**, Anxo Pérez, Javier Parapar, Xi Wang
10.1145/3799682.3840172 (Proc. of the 35th ACM Int'l Conference on Information and Knowledge Management (CIKM 2026), Rome, Italy. Forthcoming)

**Improving clinical reliability of LLM reasoning for depression assessment via structured generation and GRPO** July 2026

Shows GRPO-trained LLMs can explain depression-screening decisions through DSM-5-aligned reasoning without sacrificing classification accuracy.
**Eliseo Bao**, Anxo Pérez, Javier Parapar
10.1177/00368504261467483 (Science Progress, 109(3))

**Learning Evidence of Depression Symptoms via Prompt Induction** July 2026

Proposes Symptom Induction, compressing labeled examples into interpretable guidelines that improve LLM classification of depressive symptoms.
**Eliseo Bao**, Anxo Pérez, David Otero, Javier Parapar
10.1145/3805712.3809873 (Proc. of the 49th International ACM SIGIR Conference (SIGIR 2026), Melbourne, Australia)

**How does depression talk on social media? Modeling depression language with relevance-based statistical language models** Dec 2025

Builds relevance-based statistical language models of depression-related language to rank users by risk across Reddit and Twitter.
**Eliseo Bao**, Anxo Pérez, David Otero, Javier Parapar
10.1016/j.osnem.2025.100339 (Online Social Networks and Media, 50, 100339)

**ReDSM5: A Reddit Dataset for DSM-5 Depression Detection** Nov 2025

A 1,484-post Reddit dataset with sentence-level, clinician-annotated DSM-5 depressive-symptom labels and rationales.
**Eliseo Bao**, Anxo Pérez, Javier Parapar
10.1145/3746252.3761610 (Proc. of the 34th ACM Int'l Conference on Information and Knowledge Management (CIKM 2025), Seoul, Republic of Korea)

**Towards Explainable and Safe Systems for Health Data** July 2025

Doctoral consortium paper outlining a research plan for transparent, explainable, and safe health information systems.
**Eliseo Bao**
10.1145/3726302.3730121 (SIGIR 2025 Doctoral Consortium, Padua, Italy)

**MindWell: A Conversational Agent for Professional Depression Screening on Social Media** Apr 2025

Demonstrates an open-source RAG chatbot that helps clinicians review social media history for BDI-II depressive symptoms.
**Eliseo Bao**, Anxo Pérez, Javier Parapar
10.1007/978-3-031-88720-8_9 (Advances in Information Retrieval — ECIR 2025, LNCS, Part V, pp. 47-52, Lucca, Italy)

**Explainable depression symptom detection in social media** Sept 2024

Transformer-based models that both detect and explain depressive symptom markers in social media text.
**Eliseo Bao**, Anxo Pérez, Javier Parapar
10.1007/s13755-024-00303-9 (Health Information Science and Systems, 12(1), 47)

**Adapting Large Language Models for Underrepresented Languages** 2024

Introduces a Galician-adapted Llama 3.1 model and instruction dataset, outperforming the base model and another Galician model.
**Eliseo Bao**, Anxo Pérez, Javier Parapar
(VII Congreso XoveTIC, Universidade da Coruña — CICAS-Sngular Award)

**MindWell: an open-source chatbot to assist in the detection and monitoring of depressive disorders** 2024

Designed and evaluated the MindWell chatbot with a professional psychologist.
**Eliseo Bao**
(M.Sc. Thesis, Universidade da Coruña)

**Ranking of Reddit users using Relevance Models for depressive disorders** 2022

Built depression-risk vocabularies and ranking methods from Reddit using relevance-based language models.
**Eliseo Bao**
(B.Sc. Thesis, Universidade da Coruña)

## Honors, Awards and Scholarships

**Extraordinary Master's Award** 2025

M.Sc. in Computer Engineering, 2023/2024 cohort.

**CICAS-Sngular Award** 2024

Awarded for the best work in line with best practices for Open Science, Open Data, Open Access and Open Source. Certification · Publication

**B.Sc. thesis category award** 2023

Certification · YouTube video

**Finalist, Best Open Source University Project Award** 2022

Publication

**Departmental Collaboration Scholarship** 2021

Department of Computer Science and Information Technologies, November 2020–May 2021.

## Talks

- **28 October 2026** — "Artificial Intelligence and Mental Health: What Can Social Media Tell Us?", with Anxo Pérez Vila, 12th Healthy October programme, Faculty of Computer Science, Universidade da Coruña.
- **19 May 2026** — "Explainable AI for Depression Symptom Detection on Social Media," invited talk, International University of La Rioja (UNIR).
- **13 February 2026** — "Explainable depression symptom detection in social media," 2nd Symposium on Mental Health and Artificial Intelligence, Université de Caen Normandie, France.

## Program Committees & Reviewing

- **2027 (upcoming)** — Program Committee, ECIR 2027 (Resource Papers track).
- **2027 (upcoming)** — Reviewer, WWW 2027 (full papers).
- **2026** — Program Committee, CIKM 2026 (Resources track; Short Papers track).
- **2026** — Program Committee, CLEF 2026 (eRisk Lab).
- **2026** — Reviewer, SIGIR 2026 (full papers).
- **2026** — Reviewer, Journal of Intelligent & Fuzzy Systems.
- **2026** — Reviewer, Language Resources and Evaluation (Springer).
- **2026** — Reviewer, PLOS Digital Health.
- **2025** — Program Committee, CIKM 2025 (Resource Papers track).
- **2025** — Program Committee, CLEF 2025 (eRisk: Early Risk Prediction on the Internet).
- **2025** — Reviewer, SIGIR 2025 (subreviewer / external reviewer).
- **2025** — Reviewer, Digital Health (SAGE).
- **2025** — Reviewer, Health Information Science and Systems (Springer).
- **2025** — Reviewer, IEEE Transactions on Affective Computing.
- **2024** — Reviewer, Health Information Science and Systems (Springer).

## Supervision and Mentoring

- **2026** — Co-supervised 2 bachelor's theses and 1 master's thesis.
- **21–22 October 2026** — Mentor, Datathon Justicia, Challenge 2: Childhood and Youth.
- **2025** — Co-supervised 1 bachelor's thesis and 2 master's theses.
- **2024** — Co-supervised 1 bachelor's thesis.
- **2020–2021** — Student mentor, Student Mentoring Programme (PAT), Faculty of Computer Science, Universidade da Coruña, both semesters.

## Outreach

- **25 September 2026** — Outreach participant, G-Night / European Researchers' Night, Universidade da Coruña.
- **2026** — Participation in the DAFIC Research Fair, Faculty of Computer Science, Universidade da Coruña.

## Academic Training

- **2025** — 16th European Summer School on Information Retrieval (ESSIR 2025), University of Wolverhampton, UK.

## Languages

**Galician**

Native

**Spanish**

Native

**English**

Professional working proficiency