

Richard Evans

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PROFESSIONAL SUMMARY

PhD-qualified Computer Science expert with 25+ years of academic and commercial experience in natural language processing (NLP), machine learning (ML), and AI system development. Specialized in creating and assessing complex problems across CS subdomains including algorithms (e.g., parsing and sequence tagging), data structures (e.g., trees and graphs in syntactic analysis), programming languages, and machine learning. Proven track record in evaluating AI-generated responses for accuracy and rigor, providing detailed written feedback, and collaborating asynchronously to iterate on model performance. Contributed to RLHF frameworks, synthetic data generation, and model finetuning. Eager to leverage deep subject-matter expertise to support Mercor's AI research lab collaboration in replicating real-world CS workflows.

KEY SKILLS

Computer Science Expertise: Algorithms (syntactic parsing, sequence labeling, simplification transformations); Data Structures (XML trees, graphs for semantic signatures); Machine Learning (finetuning LLMs like BERT/DeBERTa/ELECTRA, CRF models, RLHF); Programming Languages (Python, Perl, Java/JS/GF); Databases (JSON handling, gazetteers, research databases); Operating Systems (Bash, Linux tools like screen/xterm).

AI Development & Evaluation: Creating complex MCQs and multimedia tasks in CS/ML; Assessing AI responses for conceptual accuracy, technical rigor, and relevance; Providing clear feedback on problem sets, code solutions, and explanations; Synthetic data generation for training AI models.

Research & Analysis: Data cleaning/anomaly detection (e.g., utterance canonicalization); Feature extraction/labeling; A/B testing and optimization in model training; Extrinsic evaluation via NLP applications.

Communication & Collaboration: Authored 30+ peer-reviewed papers; Presented at international conferences (ACL, COLING, EMNLP); Taught postgraduate CS topics; Peer reviewer for top journals/conferences; Asynchronous coordination via Git/GitLab/Slack.

Tools & Libraries: PyTorch, Transformers, NLTK, spaCy, NumPy, Pandas, RegEx, CRF++, Weka, TiMBL, Google Colab, Gradle, jq.

Other: Strong attention to detail in annotation/evaluation; Ethical AI focus (e.g., chaired ethics committees); Analytical thinking for drawing evidence-based conclusions.

EDUCATION

PhD in Computer Science: "Sentence Simplification for Text Processing" <i>University of Wolverhampton, UK</i>	Feb. 2012 – Jan. 2020
Msc in Cognitive Science and Natural Language <i>University of Edinburgh, UK</i>	Sep. 1995 – Jul. 1996
BA (Hons) Linguistics <i>University College of North Wales, UK</i>	Sep. 1992 – Jun. 1995

WORK EXPERIENCE

AI Writing Evaluator (Contract) Smart Ecosystem, Inc., Remote	May 2024 – Present
<ul style="list-style-type: none">Created and assessed complex postgraduate-level MCQs and multimedia tasks in computer science (focusing on machine learning, algorithms, and reasoning skills) to evaluate and improve AI model performance.Evaluated AI-generated responses for accuracy, rigor, and relevance, providing detailed written feedback to implement RLHF frameworks.Developed tasks requiring multi-turn prompts/responses, incorporating calculation and perception skills; Reviewed/corrected others' work for technical precision.Parsed qualitative/quantitative data from prompts/responses, drawing conclusions to shape AI strategy. <p>Technical Environment: Google Sheets, Outlier AI, Python, Slack.</p>	
NLU English Language Consultant (Contract) Cerence Inc., Remote	Feb. 2023 – Mar. 2024
<ul style="list-style-type: none">Feb. 2023 – Mar. 2024 Developed semantic signatures for AI voice assistants, analyzing user commands across domains (e.g., queries involving data structures like temporal/location entities and algorithms for parsing spoken utterances).	

- Created JSGF grammars, gazetteers, and Python scripts to generate synthetic data for training/evaluating cloud-based and embedded ML models in core CS areas like natural language understanding.
- Fixed bugs, staged data, and optimized models using build automation; Improved coverage for complex queries (e.g., UEFA Euro 2024 football matches, involving database-like entity handling).
- Collaborated asynchronously via GitLab to align with technical specs and ensure model accuracy.
Technical Environment: JSGF, Git/GitLab, Excel, Emacs, JSON, Gradle, Python, jq, WinSCP.

Lecturer in Computational Linguistics

Feb. 2020 – Feb. 2023

University of Wolverhampton, UK

- Feb. 2020 – Feb. 2023 Delivered lectures on CS topics including algorithms for automatic text simplification (ATS), machine learning applications in aspect-based sentiment analysis, multi-document summarization, machine translation, and research ethics.
- Supervised 2 PhD students on deep learning models for ethical misconduct detection in legal documents (involving ML algorithms and database text processing) and biographical information extraction.
- Co-organized SemEval-2021 shared task on Lexical Complexity Prediction (198 teams), creating/evaluating problem sets in CS/ML; Analyzed feedback for model improvements.
- Co-authored 3 peer-reviewed papers on anaphora resolution (finetuning BERT) and lexical complexity, ensuring academic precision.
- Chaired ethics committees, focusing on fair AI deployment and data integrity.

Researcher / Research Associate

Dec. 2016 – Feb. 2020

University of Wolverhampton, UK

- Developed CRF-based algorithms for partial parsing (sequence labeling of compound clauses/complex constituents), including annotation tools and training data; Achieved F1 scores of 0.72/0.53.
- Performed extrinsic evaluations of sentence simplification algorithms via CS applications (e.g., summarization, semantic role labeling, information extraction).
- Contributed to ML research on irony detection, readability assessment, and pronominal anaphora resolution informed by gaze data.
- Implemented methods in Perl/Python, emphasizing algorithmic efficiency and data structure optimization.

Earlier Roles (Research Fellow/Associate)

2003 – 2016

University of Wolverhampton, UK

- 2003 – 2016 Led EU-funded FIRST project (€2.5M) on ATS for accessibility, developing algorithms to detect/resolve syntactic complexity, ambiguity, and data structures for annotated corpora.
- Created frameworks for open-domain named entity recognition using web search and semantic clustering (algorithms for taxonomy derivation).
- Developed ML methods for NP animacy detection (WordNet, statistical testing, MBL classifiers) to constrain anaphora resolution algorithms.
- Conducted information extraction from emails/databases, evaluating systems extrinsically.
- Served as scientific coordinator, producing reports and collaborating on grant proposals.

Audio Attributes Annotator / Audio-Visual Segmentation (Contract)

Mar. 2025 – May 2025

RWS Holdings PLC, Remote

- Annotated multimedia data for AI models, identifying events with precision (onset/duration); Inferred masks using video processing models, contributing to ML training datasets.
Technical Environment: Single Review Tool (SRT) Workplace, SRT HALO.

Partial Parsing Using BERT for Sentence Simplification (PPUBSS)

Feb. 2020 — Present

- Finetuned LLMs (BERT, DeBERTa, ELECTRA) for sequence tagging in syntactic analysis, outperforming CRF baselines ($F1=0.97/0.86$); Deployed on HuggingFace for CS applications. Skills: Python, PyTorch, RegEx, spaCy, Transformers.

A Flexible Interactive Reading Support Tool (FIRST)

Oct. 2011 — Sep. 2014

- Developed algorithms for sentence simplification and feature detection (e.g., passive sentences, complexity markers) to enhance accessibility; Evaluated via user studies.
Skills: CRF++, Git, Perl.

SELECTED PAPERS

Evans, R. (2001). Applying machine learning toward an automatic classification of it. *Literary and linguistic computing*, 16(1):45–58.

Evans, R. (2011). Comparing methods for the syntactic simplification of sentences in information extraction. *Literary and Linguistic Computing*, 26 (4):371–388.

Evans, R. and Orasan, C. (2013). Annotating signs of syntactic complexity to support sentence simplification. In Habernal, I. and Matousek, V., editors, *Text, Speech and Dialogue. Proceedings of the 16th International Conference TSD 2013*, pages 92–104. Springer, Plzen, Czech Republic.

Evans, R. and Orasan, C. (2019a). Identifying signs of syntactic complexity for rule-based sentence simplification. *Natural Language Engineering*, 25 (1):69–119.

Evans, R. and Orasan, C. (2019b). Sentence simplification for semantic role labelling and information extraction. In *Proceedings of the International Conference "Recent Advances in Natural Language Processing '2019" (RANLP-2019)*, pages 285–294, Varna, Bulgaria.

Orăsan, C., Evans, R., and Mitkov, R. (2018). Intelligent text processing to help readers with autism. In Shaalan, K., Hassanien, A. E., and Tolba, M. F., editors, *Intelligent Natural Language Processing: Trends and Applications*, pages 713–740. Springer.

Orăsan, C. and Hasler, L. (2007). Computer-aided summarisation: how much does it really help? In *Proceedings of Recent Advances in Natural Language Processing (RANLP 2007)*, pages 437–444, Borovets, Bulgaria.

Parodi, G., Evans, R., Ha, L. A., Mitkov, R., c. J. J. Vergara, and Olivares-López, R. (2021). A sequence labelling approach for automatic analysis of *ello*: tagging pronouns, antecedents, and connective phrases. *Language Resources and Evaluation*, 56 (1):139–164.

Pekar, V. and Evans, R. (2007). Discovery of language resources on the web: Information extraction from heterogeneous documents. *Literary and Linguistic Computing*, 22(3):329–343.

Shardlow, M., Evans, R., and Zampieri, M. (2022). Predicting lexical complexity in English texts: the Complex 2.0 dataset. *Language Resources and Evaluation*, 56:1153–1194.

Yaneva, V. and Evans, R. (2015). Six good predictors of autistic text comprehension. In *Proceedings of Recent Advances in Natural Language Processing (RANLP 2015)*, pages 697–706, Hissar, Bulgaria.

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