Christopher Jack Bryant

Natural Language Processing Research Scientist

Email: chrisb@rfc.co.uk

Research Interests

Grammatical Error Detection and Correction, Natural Language Processing, artificial data generation, automatic data annotation and evaluation, computer-aided language learning, code-switching.

Research Employment

Applied AI Research Scientist   03/2023 - Present
Writer, Inc. San Francisco, California, USA (Remote)

Research Associate   01/2019 - 03/2023
Institute for Automated Language Teaching and Assessment (ALTA)
University of Cambridge, UK
Supervisor: Prof. Paula Buttery and Prof. Ted Briscoe
Topics: Grammatical Error Detection and Correction, automatic annotation and evaluation, computer-aided language learning, code-switching

Principal Applied Research Scientist   04/2022 - 12/2022
Reverso, Paris, France (Remote)
Topics: Grammatical Error Correction, artificial data generation, product development

Research Consultant   01/2021 - 04/2021
Self-Employed, UK
Topics: Company sustainability report classification

Research Assistant   01/2014 - 08/2015
National University of Singapore, Singapore
Supervisor: Prof. Hwee Tou Ng
Topics: Grammatical Error Correction, discourse parsing

Intern - LISTA Project   07/2012 - 09/2012
University of Edinburgh, UK
University of the Basque Country, Spain
Supervisor: Prof. Martin Cooke and Dr. Mª Luisa García Lecumberri
Topics: Accent perception, speech annotation

Education

Doctor of Philosophy in Computer Science   09/2015 - 12/2018
University of Cambridge, UK
Supervisor: Prof. Ted Briscoe
Thesis: Automatic Annotation of Error Types for Grammatical Error Correction

MSc Speech and Language Processing   09/2012 - 09/2013
University of Edinburgh, UK
Supervisor: Prof. Bonnie Webber and Prof. Philipp Koehn
Thesis: An Investigation into More Informative Methods of Machine Translation Evaluation

MA (Hons) Chinese and Linguistics – First Class   09/2008 - 09/2012
University of Edinburgh, UK
Dalian University of Technology, China

Supervisor: Dr. Robert Truswell
Thesis: The Syntactic Structure of Coverbs in Mandarin Chinese

Awards, Grants and Scholarships

Cambridge Language Sciences Research Incubator Fund	2019, 2021
Churchill College Conference Grants	2016 - 2018
Automated Language Teaching and Assessment (ALTA) PhD Studentship	2015 - 2018
Edinburgh Santander Masters Scholarship	2012 - 2013

Internationally Reviewed Publications

Stuart Mesham, Christopher Bryant, Marek Rei and Zheng Yuan. 2023. "An Extended Sequence Tagging Vocabulary for Grammatical Error Correction." In *Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics*, Dubrovnik, Croatia.

Christopher Davis, Christopher Bryant, Andrew Caines, Marek Rei and Paula Buttery. 2022. "Probing for targeted syntactic knowledge through grammatical error detection." In *Proceedings of the 26th Conference on Computational Natural Language Learning*, pages 360-373, Abu Dhabi, UAE / Online.

Shiva Taslimipoor, Christopher Bryant and Zheng Yuan. 2022. "Improving Grammatical Error Correction for Multiword Expressions." In *Proceedings of the 18th Workshop on Multiword Expressions @LREC2022*, pages 9-15, Marseille, France / Online.

Zheng Yuan, Shiva Taslimipoor, Christopher Davis and Christopher Bryant. 2021. "Multi-Class Grammatical Error Detection for Correction: A Tale of Two Systems." In *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing*, pages 8722-8736, Punta Cana, Dominican Republic / Online.

Li Nguyen, Christopher Bryant, Sana Kidwai and Theresa Biberauer. 2021. "Automatic Language Identification in Code-Switched Hindi-English Social Media Text." In *Journal of Open Humanities Data*, Volume 7:7, pages 1-13.

Zheng Yuan and Christopher Bryant. 2021. "Document-level grammatical error correction." In *Proceedings of the Sixteenth Workshop on Innovative Use of NLP for Building Educational Applications*, pages 75–84, Kyiv, Ukraine / Online.

Li Nguyen and Christopher Bryant. 2020. "CanVEC - the Canberra Vietnamese-English code-switching natural speech corpus." In *Proceedings of The 12th Language Resources and Evaluation Conference*, pages 4121–4129, Marseille, France / Online.

Felix Stahlberg, Christopher Bryant and Bill Byrne. 2019. "Neural grammatical error correction with finite state transducers." In *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume 1 (Long and Short Papers)*, pages 4033–4039, Minneapolis, Minnesota, USA.

Christopher Bryant and Ted Briscoe. 2018. "Language model based grammatical error correction without annotated training data." In *Proceedings of the 13th Workshop on Innovative Use of NLP for Building Educational Applications*, pages 247–253, New Orleans, Louisiana, USA.

Christopher Bryant, Mariano Felice, and Ted Briscoe. 2017. "Automatic annotation and evaluation of error types for grammatical error correction." In *Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics*, pages 793-805, Vancouver, Canada.

Mariano Felice, Christopher Bryant, and Ted Briscoe. 2016. "Automatic extraction of learner errors in ESL sentences using linguistically enhanced alignments." In *Proceedings of COLING 2016, the 26th International Conference on Computational Linguistics: Technical Papers*, pages 825-835, Osaka, Japan.

Christopher Bryant and Hwee Tou Ng. 2015. "How far are we from fully automatic high quality grammatical error correction?" In *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 1: Long Papers)*, pages 697-707, Beijing, China.

M$^{\underline{a}}$ Luisa García Lecumberri, Martin Cooke, and Christopher Bryant. 2015. "Accent evaluation from extemporaneous child speech." *Poznań Studies in Contemporary Linguistics*, Volume 51, pages 227-246.

Shared Tasks Organised

Elena Volodina, Christopher Bryant, Andrew Caines, Orphée De Clercq, Jennifer-Carmen Frey, Elizaveta Ershova, Alexandr Rosen, Olga Vinogradova. 2023. "The MultiGED-2023 shared task on multilingual grammatical error detection." In progress.

Christopher Bryant, Mariano Felice, Øistein E. Andersen and Ted Briscoe. 2019. "The BEA-2019 shared task on grammatical error correction." In *Proceedings of the Fourteenth Workshop on Innovative Use of NLP for Building Educational Applications*, pages 52-75, Florence, Italy.

Nianwen Xue, Hwee Tou Ng, Sameer Pradhan, Rashmi Prasad, Christopher Bryant, and Attapol Rutherford. 2015. "The CoNLL-2015 shared task on shallow discourse parsing." In *Proceedings of the Nineteenth Conference on Computational Natural Language Learning - Shared Task*, pages 1-16, Beijing, China.

Hwee Tou Ng, Siew Mei Wu, Ted Briscoe, Christian Hadiwinoto, Raymond Hendy Susanto, and Christopher Bryant. 2014. "The CoNLL-2014 shared task on grammatical error correction." In *Proceedings of the Eighteenth Conference on Computational Natural Language Learning: Shared Task*, pages 1-14, Baltimore, Maryland, USA.

Survey Papers

Christopher Bryant, Zheng Yuan, Muhammad Reza Qorib, Hannan Cao, Hwee Tou Ng, and Ted Briscoe. 2023. "Grammatical Error Correction: A Survey of the State of the Art." In *Computational Linguistics*, under review.

Theses and Technical Reports

Christopher Bryant. 2019. "Automatic annotation of error types for grammatical error correction." *Technical Report UCAM-CL-TR-938*, PhD Thesis, University of Cambridge, Computer Laboratory.

Christopher Bryant and Mariano Felice. 2016. "Issues in preprocessing current datasets for grammatical error correction." *Technical Report UCAM-CL-TR-894*, University of Cambridge, Computer Laboratory.

Invited Talks and Tutorials

Grammatical Error Correction: Past, Present, Future 2023
Linguistics and Language Technology Laboratory Talk Series 2023
FPT University, Ho Chi Minh City, Vietnam / Online

Linguistics and Computer Science: Empowered by Collaboration 2023

When Linguistics Theory Meets Computational Practice (LiTComP) Workshop
University of Cambridge, Cambridge, UK

The Evolution of Automatic Grammatical Error Correction   2022
NLP4CALL Workshop
Université catholique de Louvain, Louvain-la-Neuve, Belgium

An Introduction to Automatic Grammatical Error Correction   2022
Cardiff NLP Summer Workshop
Cardiff University, Cardiff, Wales

Current Challenges in Automatic Grammatical Error Correction   2021
RIKEN Center for Advanced Intelligence Project (AIP)
Konan University, Kobe, Japan / Online

An Introduction to Automatic Grammatical Error Correction (GEC)   2021
AICTE Faculty Development Program, Recent Advances of NLP using Deep Learning
National Institute of Techology, Silchar, Assam, India / Online

A Crash Course in Automatic Grammatical Error Correction   2020
With Roman Grundkiewicz and Mariano Felice
COLING Tutorials
Barcelona, Spain / Online

ERRor ANnotation Toolkit: ERRANT   2020
English Language iTutoring (ELiT) All-Hands Seminar
Cambridge, UK / Online

Unsupervised Grammatical Error Correction given Detection   2020
Automated Language Teaching and Assessment Annual Review Seminar
Cambridge Assessment, Cambridge, UK / Online

The BEA 2019 Shared Task on Grammatical Error Correction   2019
Automated Language Teaching and Assessment Annual Review Seminar
Cambridge Assessment, Cambridge, UK

Where is the matrix language? Data from the Canberra Vietnamese English corpus   2019
With Li Nguyen
Center of Excellence for the Dynamics of Language (CoEDL) Linguistics Seminar
The Australian National University, Canberra, Australia

Grammatical Error Detection and Correction   2017
With Mariano Felice
Summer School in Machine Learning for Digital English Language Teaching
Chania, Crete, Greece

Automatic Annotation for Error Correction   2016
With Mariano Felice
Automated Language Teaching and Assessment Annual Review Seminar
Cambridge Assessment, Cambridge, UK

Supervising and Teaching
Grammatical error correction for code-switched sentences by learners of English   2023
Kelvin Wey Han Chan

MPhil in Advanced Computer Science, University of Cambridge
Co-supervised with Dr. Zheng Yuan

Pre-trained Generative Language Models for Unsupervised Grammatical Error Correction   2023
Yulong Lin
MPhil in Advanced Computer Science, University of Cambridge
Co-supervised with Dr. Zheng Yuan and Dr. Marek Rei

Grammatical Error Correction using Sequence-Tagging and Masked Language Modelling   2022
Stuart Mesham
MPhil in Advanced Computer Science, University of Cambridge
Co-supervised with Dr. Zheng Yuan and Dr. Marek Rei

Using NLP To Detect Public Opinion of Stock   2022
Karan Sharma
BA (Hons) Computer Science, University of Cambridge
Co-supervised with Dr. Mariano Felice

Introducing a Copying Mechanism to Translation-Based Grammatical Error Correction   2022
Aleksander Misztal
BA (Hons) Computer Science, University of Cambridge
Co-supervised with Dr. Zheng Yuan

A Recursive Recurrent Neural Network Decoder for Grammatical Error Correction   2022
Jiaxin Wang
BA (Hons) Computer Science, University of Cambridge
Co-supervised with Dr. Zheng Yuan

Detecting Sustainability Initiatives in Company Reports   2021
Mircea-Dan Hirlea
MSc in Artificial Intelligence, Imperial College London
Co-supervised with Dr. Marek Rei

Artificial Error Generation for Grammatical Error Correction   2021
Luou Wen
MPhil in Advanced Computer Science, University of Cambridge
Co-supervised with Dr. Marek Rei

Unsupervised Grammatical Error Detection   2020
Simone Primarosa
MPhil in Advanced Computer Science, University of Cambridge
Co-supervised with Dr. Marek Rei

Natural Language and Information Processing   2016-2017
Small group supervisions
University of Cambridge

Peer Reviewing

Area Chair for Empirical Methods in Natural Language Processing (EMNLP 2022)
Computational Linguistics (CL)
Computer Speech and Language (CSL)
The Association for Computational Linguistics (ACL)
The Association for Computational Linguistics Rolling Review (ARR)
Transactions of the Association for Computational Linguistics (TACL)

The North American Chapter of the Association for Computational Linguistics (NAACL)
International Conference on Computational Linguistics (COLING)
The Joint Conference on Lexical and Computational Semantics (*SEM)
Workshop on Innovative Use of NLP for Building Educational Applications (BEA)
Workshop on Natural Language Processing Techniques for Educational Applications (NLPTEA)

General Skills

Computing: Python, Bash, LaTeX, HuggingFace, spaCy, NLTK, Gradio, Git
Human Languages:

Native	English
Intermediate	Mandarin Chinese, Spanish
Upper Beginner	Italian, French
Beginner	Japanese, Vietnamese

Links

Website:	`https://chrisjbryant.github.io/`
Github:	`https://github.com/chrisjbryant`
Google Scholar:	`https://scholar.google.co.uk/citations?user=jMq-Pg4AAAAJ`
LinkedIn:	`https://www.linkedin.com/in/christopher-bry4nt/`