Seth J S Aycock

Master's Graduate with Distinction in Speech & Language Processing from Edinburgh University

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⌂: (Home) The Leigh, Surby Mooar, Rushen, Isle of Man, IM9 6TD

TECHNICAL SKILLS

Programming:	Python, R - Competency with course-based, project & research experience.
Software & Libraries:	Bash, Git, PyTorch, Jupyter, JoeyNMT - Experienced. OpenFST, Festival - project experience.
Tools:	VSCode, PyCharm, RStudio, LaTeX- Experienced.
Languages (CEFR):	Native (C2): English. High proficiency (C1/B2): French. Familiar (A2/A1): Spanish, German.

PUBLICATIONS & TALKS

- Aycock, S. 2020. A Third-Factor Account of Locality: Explaining impenetrability and intervention effects with minimal search. *Cambridge Occasional Papers in Linguistics* 12. 1-30. (Available here). [Published Undergraduate Dissertation]
- Aycock, S. 2020. Towards a Third-Factor Account of Locality. SyntaxLab, University of Cambridge, 18 February 2020.
- Hughes, Aycock, Caines, Buttery & Hutchings. 2020. Detecting Trending Terms in Cybersecurity Forum Discussions. *In Proc. EMNLP 6th Workshop on Noisy User-Generated Text*, pp. 107-115. (Available here). [Adapted UROP report]
- Aycock, S., Stanojević, M., & Steedman, M. *In preparation.* Target-side CCG Supertag Prediction Improves Machine Translation. (Intending to submit to EAMT 2022).

EDUCATION

Speech and Language Processing MSc - University of Edinburgh — September 2020 - August 2021
School of Philosophy, Psychology & Language Sciences; School of Informatics

- Grade: **With Distinction**; averaged 81.5/100. Courses as follows (Grade / 100):
- Accelerated NLP (79) - Syntactic & semantic processing, NLP models, algorithms and machine learning methods.
- Speech Processing (80) - Signal processing, basic text-to-speech synthesis and automatic speech recognition methods.
- Programming for NLP (77) - Practical training in Python in the context of NLP and speech processing.
- Univariate Statistics & Methodologies with R (87) - Practical training in R for inferential statistics and regression analysis.
- Natural Language Understanding, Generation & Translation (83) - current deep learning methods/tools incl. PyTorch.
- Automatic Speech Recognition (87) - covering advanced neural methods and tools; built ASR system in OpenFST.
- Speech Synthesis (72) - building and experimenting with a unit selection TTS system in Festival.
- Simulating Language (75) - Bayesian modelling of language evolution, acquisition and communication in Python.
- Dissertation (85) - Incorporating target-side CCG supertags into a Transformer translation model, using JoeyNMT.
- Core skills: Practical NLP training, long-term collaborative research, statistical analysis, & academic writing.

Linguistics BA Hons - Trinity Hall, University of Cambridge — October 2017 - June 2020
Dept of Theoretical & Applied Linguistics

- Grade: **Class I with Distinction**; averaged 75.5/100. Courses as follows:
- 3rd year: Phonetics, Semantics & Pragmatics, Linguistic Theory, Dissertation in Theoretical Syntax (Starred First[1]).
- 2nd year: Computational Linguistics, Syntax[1], Comparative Indo-European Linguistics, & Historical Linguistics.
- 1st year: Phonetics & Phonology, Semantics & Syntax, Psycholinguistics & Acquisition, History & Varieties of English.
- Core skills: Independent research, data analysis, critical evaluation, communication skills, & time management.

King William's College, Isle of Man - HMC School — September 2010 - June 2017

- GCSEs: Maths, Physics, Chemistry, Biology, English Language, English Literature, French, Spanish, Geography, Music, Religious Studies. All A* - only Isle of Man student to achieve this in 2015.
- International Baccalaureate: 44/45 (Top 0.5% globally). Higher Level: Physics, Chemistry, French. Standard Level: Maths, English, Geography. All Level 7 (A* equivalent), plus 2 of 3 bonus points (Extended Essay & TOK).

Academic Achievements

- Placed 2nd highest overall in second year and third year Linguistics results.
- Received *Sufian Passamano* Linguistics prize (Best in Trinity Hall 2019, 2020); awarded Trinity Hall Scholarship (2019) and Bateman Scholarship (2020) for exceptional results.

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[1]Achieved 80+/100. Highest possible grade is 85.

EXPERIENCE

Natural Language Processing (NLP) Research Internship
June 2019 - September 2019

Dept of Computer Science & Technology, University of Cambridge
10 weeks

- Undergraduate Research Opportunities Program (UROP) project: Trending Topics in an Underground Hacking forum.
- Carried out interdisciplinary research in both Cybercrime & NLP; working with a supervisor from each field.
- Project focus: building a tool in R to detect trending topics in a hacking forum using lightweight method.
- Collaboration with researchers led to adapting and publishing my project report at EMNLP W-NUT 2020.
- Developed research skills including experiment design, coding, academic writing & presenting; delivered 2 terminal presentations, to NLP Research group & Cambridge Cybercrime Centre.

NLP Research Internship
July 2018 - September 2018

Dept of Computer Science & Technology, University of Cambridge
8 weeks

- Independent UROP research project on text mining & classification, topic modelling & data change analysis.
- Cross-disciplinary research across Machine Learning, NLP, & Cybersecurity, using Python for classification experiments & data analysis.
- Project focus: phishing email classification, & annual change in most informative features & most common topics.
- Working in a team of 10 interns on group projects requiring collaboration, & providing mutual help on individual projects.
- Practical machine learning classes covering text & image classification, feature engineering & selection, & neural networks.

ACHIEVEMENTS & INTERESTS

Language

- **International Linguistics Olympiad** Two-time contestant for Isle of Man, 2016 in Mysore, India & 2017 in Dublin, Ireland, competing against 30+ countries at the highest level, achieving highest ever Isle of Man result; Isle of Man Linguistics Olympiad Gold Medal 2016 & 2017. International volunteer at 2019 IOL in Yongin, South Korea, and selected for 2021 IOL in Ventspils, Latvia (online). Helping with preparations for IOL 2022 in the Isle of Man.

Music

- **Edinburgh University Chamber Choir** Member (2020-21, Tenor) of classical choir performing music from 12th to 21st centuries.
- **Peterhouse Chapel Choir** Choral Exhibitioner (2017-20, Tenor) in choir of Cambridge's oldest college, 8+ hours weekly including 2 services; toured Copenhagen & Faroe Islands, 2018, & toured Latvia & Lithuania, 2019.
- **ABRSM Piano Grades 1-8**, of which Grades 6-8 Merit; ABRSM Music Theory Grades 1-5.

Sport

- **Edinburgh University Cricket Club** 1st XI Member (2020-21), member of Stewart's Melville CC.
- **Captain of Cambridge University Cricket Club** Colleges' XI (2019-20), Captain of Trinity Hall Cricket Club (2019-20), & Junior International cricketer for the Isle of Man; member of Remnants CC, Castletown CC.
- **Cambridge University Athletics Club** Member & competitor in 2019 Varsity contest in triple jump.
- **Duke of Edinburgh** Gold, Silver & Bronze Award holder, with expeditions in Isle of Man, Yorkshire Dales & Snowdonia.
- **Tour du Mont Blanc** Completed 170km 10-day long-distance trek in France, Italy & Switzerland, September 2018.
- **GR20 Corsica** Completed 180km 14-day long-distance trek in Corsica, September 2021.

Interests

- **Trinity Hall University Challenge** Quiz Team Captain in First year (2017-18) & Third year (2019-20); Team Member in Second year (2018-19).
- **Photography & Video** Keen amateur photographer & videographer; produced 5 official videos for Peterhouse Choir.
- **Hiking and Climbing** Frequently found in the mountains.

ACADEMIC REFEREES

Dr Marieke Meelen	Director of Studies & Linguistics Fellow, Trinity Hall. Email: mm986@cam.ac.uk
Dr Andrew Caines	Postdoctoral researcher, Dept of Computer Science & Technology. Email: apc38@cam.ac.uk
Dr Miloš Stanojević	Postdoctoral researcher, University of Edinburgh. Email: milosh.stanojevic@gmail.com