jackdeadman1@gmail.com

JACK DEADMAN, PHD

Education

Sheffield University (2018-23)
Ph.D in Computer Science

Sheffield University (2014-18)
MCOMP in Computer Science
(Equiv. BSc + MSc)
Awarded **First** with highest overall grade.

Sussex Downs College (2012-14)
A-level Computing (A)
A-level Maths (B)
BTEC IT (Distinction*)

Bishop Bell School (2007-12)
11 GCSEs A*-C including Maths and English

Skills

Presenting
Teaching
Deep Learning
Machine Learning
Signal Processing
Data Science

Programming

Python
JavaScript
Ruby
Java
Bash
SQL
HTML
CSS
LaTeX

Tools

PyTorch
Kaldi
Numpy
Pandas
Git
Svelte
React
Jupyter Notebooks

Profile

Dedicated and detailed researcher with 4 years experience in graduate-level research in speech processing and machine learning. Publications in international conferences such as ICASSP and INTERSPEECH. A capable communicator with experience in presenting to research groups domestically and internationally, as well as 6+ years experience teaching undergraduates. Seeking a machine learning engineering job in industry

Experience

PhD, Sheffield University — Oct 2018 - Jan 2023

- Thesis Title: Simulating realistic multiparty speech data for the development of distant microphone ASR systems
- Worked with Prof. Jon Barker in the Speech and Hearing group

Research

- Designed and ran experiments investigating the mismatch between the way people behave in real life compared to what is used in simulated data for speech recognition. In particular, in multiparty scenarios where speakers are far away from microphones and talk over one another
- Deployed automatic people detection algorithms to measure the separation between speakers using videos capturing unscripted parties
- Developed novel algorithms to locate the position of speakers inside rooms through combining camera estimates allowing for distances to microphones to be measured
- Developed turn-taking models based on finite-state machines to generate realistic speaking patterns when trained on real data
- Used the turn-taking models to create representations to characterise the data they were trained on. This was shown to be a predictor for speech separation performance

General experience

- Gave research talks internally in seminars as well as international through invited talks and conference presentations
- Taught undergraduates in labs throughout the PhD across a wide range of subjects such as data science, machine learning, speech processing and web technologies
- Marked assignments and exams for these modules promptly with informative feedback
- Experience in developing complex speech recognition pipelines using Kaldi as well as modern end-to-end systems using PyTorch
- Experience in developing multi-channel speech enhancement pipelines using mask estimation techniques and beamforming
- Experience in developing machine learning pipelines to train and evaluate systems. This includes deploying them across high performance computing facilities (HPC)
- Created open-sourced annotation tools (https://github.com/jackdeadman/video-annotation-tools)

Awards

2020 INTERSPEECH 2020 Travel Grant (ISCA)

2019 HackSheffield: Best Overall Hack (MajorLeagueHacking)

2018 HackSheffield: Best Financial Hack (CapitalOne)

2018 Full PhD scholarship (EPSRC)

2018 Mappin Medal for student with greatest distinction (Sheffield University)

2017 Summer Research Scholarship (EPSRC)

2017 Highly Commended paper in Computer Science (Undergraduate Awards)

2016 Winning team in "Software Hut" module (Sheffield University)

Research Intern, Sheffield University — Summer 2017

- Worked with Dr. Achim Brucker in the Security group developing tools to analyse malicious browser extensions
- Developed software to instrument browser extension code to trace code execution paths.
- Automatically installed the extensions in test browser sessions and explored how they behaved across popular websites
- Deployed software on 60,000 extensions using the University's High Performance Computing facilities
- Discovered extensions invading users' privacy e.g., tracking by injecting Amazon Affiliate links

Software Engineer Intern, VisualWind — Summer 2016

- Interned at a software company in the renewable energy industry
- Developed a React based "secondary SCADA" software, visualising real-time energy outputs of turbines
- Worked with large InfluxDB databases with millions of entries of time-series samples from wind turbines
- Worked with Apache Kafka to ingest the data from the wind turbines
- Used the developed software to create a prototype for visualisation software monitoring water pump usage in The Gambia which helped the company secure further funding

Other Experience, Sheffield University — Sept 2014 - Jan 23

Graduate Teaching Assistant (2018-23), Undergraduate Teaching Assistant (2016-18), Support Worker for visually impaired student (2017-19), Welfare Mentor (2016-18), Student Ambassador (2015-18)

Side Projects

ArtBot

- Collaborated with interdisciplinary team developing robotic drawing device controlled by eye-gaze technology
- Facilitated artist with Motor Neuron disease the opportunity to draw on canvas again
- Robot featured on BBC Radio Sheffield and was used to successfully pitch a series of accessibility hackathons (Hackcessible: https://www.linkedin.com/company/hackcessible)
- Featured on: https://www.youtube.com/watch?v=Oi7NLI_9Fyo

Listen@Home

- Helped develop a web platform for conducting remote listening experiments safely during COVID-19
- Was used for subjective evaluation in the Clarity Challenge (https://claritychallenge.org)

Publications

Deadman Jack, Barker Jon. **MODELLING TURN-TAKING IN MULTISPEAKER PARTIES FOR REALISTIC DATA SIMULATION.** *INTERSPEECH. 2022*

Deadman Jack, Barker Jon. **IMPROVED SIMULATION OF REALISTICALLY-SPATIALISED SIMULTANEOUS SPEECH USING MULTI-CAMERA ANALYSIS IN THE CHIME-5 DATASET.** *ICASSP. 2022*

Tu Zehai, Deadman Jack, Ma Ning, Barker Jon. **AUDITORY-BASED DATA AUGMENTATION FOR END-TO-END AUTOMATIC SPEECH RECOGNITION.** *ICASSP. 2022*

Deadman Jack, Barker Jon. **SIMULATING REALISTICALLY-SPATIALISED SIMULTANEOUS SPEECH USING VIDEO-DRIVEN SPEAKER DETECTION AND THE CHIME-5 DATASET.** *INTERSPEECH. 2020*