Lucia Eve Berger

Experience

Research Scientist Aug. 2019 – Present
Microsoft Montreal, QC

- Built and adapted Conformer RNNT models for automatic speech recognition (ASR), improving accuracy 5%.
- Implemented state-of-the-art ASR training techniques to reduce error, inference time and computation required.
- Optimised systems 30% for overlapped conditions by customer request on English and Japanese.
- Developed software to validate model robustness under difficult noise conditions. Evaluated the metrics of word emission timings and confidence, comparing with baselines.
- Reviewed code and provided development support in python, and java using azure AI toolkit.
- Achieved promotional advancement from intern to contractor to Research Scientist.

Software Engineer Jan. 2017 – Aug. 2019
Siemens Energy with German Institute for Artificial Intelligence (DFKI) and Fraunhofer IESE Berlin, BR

- Constructed REST APIs for monitoring sensor data for diverse applications in real-time.
- Enhanced the querying and aggregation of such data to meet customer specification including dataset preparation and clustering for unsupervised learning tasks.
- Led implementation of deep-learning models for traffic-sign recognition, 10% improvement over baselines.
- Completed 12-month thesis with Fraunhofer Institute for Experimental Software Engineering. Engineered framework to support regression, weather forecasting and safety goals which is still in use by engineers today.

Engineer in the Edison Engineering Program May 2015 – Jan. 2017
General Electric Montreal, QC

- Participated in the Edison Engineering Development Program (EEDP), a corporate rotational program focused on developing technical excellence.Selected out of 200 applicants to receive engineering graduate-level training.
- Partnered with teams across disciplines in Quality Assurance and Software Systems to complete diverse tasks.
- Designed new features to increase the dependability of light monitoring systems using python and swift.
- Managed two interns (undergraduate students), including reporting and delegation of tasks and scheduling.

Co-Op in Quality Assurance Testing Aug. 2014 – Feb. 2015
Pratt & Whitney Canada, Full Time Internship in QA through McGill's Engineering Internship Montreal, QC

Technical Skills

Languages: Java, Python, SQL (Postgres), JavaScript, HTML/CSS.
Frameworks: React, Node.js, Flask, JUnit, Material-UI, Pytorch, Tensorflow.
Developer Tools: Git, Docker, TravisCI, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse
Spoken Languages: English, French (C2), Spanish (C1) (8 month study abroad Mexico), German (B2), Italian (A2).

Education

Quebec Institute for Artificial Intelligence (MILA) with Udem and McGill Montreal, QC
Specialized One Year Master, Machine Learning (3.7/4.0), Full Scholarship ($3000). exp. Sept. 2023

TU Berlin, TU Kaiserslautern, FU Bozen (Erasmus Mundus Joint Degree) Germany, Italy
Master, Computer Science & Software Engineering (4.0/4.0), Full Scholarship ($48000). Aug. 2019

McGill University Montreal, QC
Bachelor, Computer Science & Economics. 1-year credit from AP courses, Lexington HS,MA,USA. May 2015

Research, Teaching and Projects

McGill University (COMP 599): Mentored female students on a six month Natural Language Project, adapting Open AI's Whisper to dysphonic speech to surpass baselines. Paper at Acoustics Canada 2023. 2023.
Champlain College: Held a research contract at McGill while teaching online classes at Champlain College. Built classification algorithms for disaster prediction. Taught Java and Operating Systems for students aged 17-19. Received 95-99% on student reviews (30 week contract). 2020–2021
European Conference on Signal Processing: Authored speech estimation paper using CNNs/RNNs. 2021
Adventures in AI: Designed 1-week long python and AI curriculum for students aged 8 to 12. (50 hour contract) 2020