Taivanbat Badamdorj (TK)

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EDUCATION

University of Alberta — Edmonton, Canada
Master of Science, Computer Vision and Machine Learning — *September 2019 – November 2021*
Thesis: Finding Interesting Moments in Videos: Audio-visual and Unsupervised Video Highlight Detection (thesis)
Advisor: Prof. Li Cheng

Tel Aviv University — Tel Aviv, Israel
Bachelor of Science, Electrical Engineering — *October 2015 – June 2019*
Thesis: Matching and Searching the Dead Sea Scrolls (paper)
Advisor: Prof. Nachum Dershowitz

RESEARCH AND WORK EXPERIENCE

Machine Learning Research Engineer II — May 2024 – Present
RBC Borealis (formerly Borealis AI) — *Vancouver, Canada*

Machine Learning Research Engineer I — May 2022 – Mar 2024
Borealis AI — *Vancouver, Canada*

Machine Learning Research Intern — Jan 2022 – April 2022
Borealis AI — *Vancouver, Canada*

Research Assistant (Computer Vision and Machine Learning) — Sep 2019 – Nov 2021
University of Alberta — *Edmonton, Canada*
Advisor: Prof. Li Cheng

Video Highlight Detection
- Worked on video highlight detection where the task is to find the interesting moments within unedited videos.
- Developed audio-visual method, in contrast to existing visual-only methods, and achieved state-of-the-art results.
- Developed unsupervised method that learns to pick highlight clips by trying to discriminate between videos, and achieved state-of-the-art results.

Medical Report Generation
- Created method that focuses on clinical accuracy of the reports generated from chest x-ray images, and achieved state-of-the-art in terms of language fluency and clinical accuracy.

Research Assistant (Computer Vision and Machine Learning) — Nov 2016 – May 2019
Tel Aviv University — *Tel Aviv, Israel*
Advisor: Prof. Nachum Dershowitz

Wiener Library
- Created a system to search for text in images of deteriorated WW2 documents.
- System currently used by researchers at the Wiener Library in London, and Holocaust Museum in Israel.

Dead Sea Scrolls
- Developed visual matching tool that matches deteriorated fragments to images of fragments before deterioration.
- Tool has been used by researchers to find many Dead Sea Scrolls fragments in their original pristine state.

Publications

- **Taivanbat Badamdorj**, Mrigank Rochan, Yang Wang, and Li Cheng, June 2022, "Contrastive Learning for Unsupervised Video Highlight Detection", in *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR).*

- **Taivanbat Badamdorj**, Mrigank Rochan, Yang Wang, and Li Cheng, October 2021, "Joint Visual and Audio Learning for Video Highlight Detection", in *IEEE/CVF International Conference on Computer Vision (ICCV).* (paper)

- Hoang Nguyen, Dong Nie, **Taivanbat Badamdorj**, Yujie Liu, Yingying Zhu, Jason Truong, and Li Cheng, November 2021, "Automated Generation of Accurate & Fluent Medical X-ray Reports", in *Empirical Methods in Natural Language Processing (EMNLP).* (paper)

- **Taivanbat Badamdorj**, Adiel Ben-Shalom, Nachum Dershowitz, and Lior Wolf, July 2020, "Fast Search with Poor OCR", *Abstracts of Digital Humanities (DH 2020)*, Ottawa, Canada. (abstract) (paper)

- **Taivanbat Badamdorj**, Adiel Ben-Shalom, and Nachum Dershowitz, February 2019, "Matching and Searching the Dead Sea Scrolls", *Proceedings of the 2018 IEEE International Conference on the Science of Electrical Engineering in Israel (ICSEE).* (paper)

Technical Skills

Languages: Python, MATLAB
Machine Learning Frameworks: PyTorch, Tensorflow, MATLAB
Developer Tools: Git, Unix/Linux environment, PyCharm, Jupyter