

BRANDON LEE

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EXPERIENCE

Lead Research Scientist – *Roboeye.ai*

Mar. 2020 ~ Present

- Designed AI-based robotics solutions that automates repetitive and dangerous manufacturing processes
- Coordinated a R&D team to research and develop data-driven computer vision and robotics solutions
 - 3D object detection pipeline based on Mask R-CNN, FCGF, PVN3D, and ICP
 - Fully automated online model training system using PyTorch, NVIDIA Isaac Sim, OpenCV, and AWS
 - C++ robotics solution for bin-picking tasks using ROS, Qt5, ZeroMQ, Protobuf, OpenCV, and PCL
- Deployed 100+ bin-picking systems that run 24/7 with minimal human interventions
- Defined scope, cost, timelines of projects and monitor progress using agile methodology
- Set up internal protocols for a timely deployment of systems to Chinese factories

Research Collaborator – *Mozilla Research*

Mar. 2020 ~ Oct. 2020

- Developed Howl, the first fully productionized wake word detection toolkit with web browser support
- Howl's ResNet achieves 97.8% accuracy on Google Speech Commands dataset with only 110K parameters
- Integrated Howl with Firefox Voice providing a completely hands-free experience to Firefox users

Research Scientist – *Samsung Research America*

Apr. 2019 ~ Mar. 2020

- Developed CI-GAN, the first co-clustering technique that exploits generative modeling
 - GAN-based architecture that maximizes mutual information between input data and co-clusters
- Applied co-clustering to user behavior analysis; implemented a user-centric TV program recommendation

Software Engineer (*Co-op*) – *Meta*

Jan. 2018 ~ Apr. 2018

- Implemented a product-level advertisements system using the KNN algorithm
- Increased click-through rate by enriching the quality of both product and user embeddings

PATENTS / PUBLICATIONS

| | |
|---|-----------------------|
| Production-Ready Applied Deep Learning | Packt Publishing 2022 |
| Co-Informatic Generative Adversarial Networks for Efficient Data Co-Clustering | Patent 2021 |
| CI-GAN: Co-Clustering by Information Maximizing Generative Adversarial Networks | ICME 2021 |
| Howl: A Deployed, Open-Source Wake Word Detection System | EMNLP 2020 |
| DeeBERT: Dynamic Early Exiting for Accelerating BERT Inference | ACL 2020 |
| Honkling: In-Browser Personalization for Ubiquitous Keyword Spotting | EMNLP 2019 |

EDUCATION

Master of Mathematics (*Computer Science*) – Advisor : Prof. Jimmy Lin

University of Waterloo

- Natural language processing, speech recognition, model compression
- Thesis: In-Browser Personalization for Ubiquitous Keyword Spotting

Bachelor of Computer Science

University of Waterloo

- Completed co-operative program and graduated with distinction