

# BRANDON LEE

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## EXPERIENCES

### Lead Research Scientist – *Roboeye.ai*

Mar. 2020 ~ Present

- Designed AI-based robotics solutions that automates repetitive and dangerous manufacturing processes
- Coordinated 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: PyTorch, NVIDIA Isaac Sim, OpenCV, and AWS
  - C++ robotics solution for bin-picking tasks: ROS, Qt5, ZeroMQ, Protobuf, OpenCV, and PCL
- Deployed over hundreds of bin-picking systems that run 24/7 with minimal human intervention
- Defined scope, cost, timelines of projects and monitor progress using agile methodology
- Set up internal protocols for deploying systems to Chinese factories in a time-effective manner

### 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

- Came up with 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 user-centric TV program recommendation

### Software Engineer ( *Co-op* ) – *Meta*

Jan. 2018 ~ Apr. 2018

- Implemented a product-level advertisements system using 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