

# MATTHEW LESKO-KRLEZA

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## WORK EXPERIENCE

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### **Amazon Robotics — Software Development Engineer Intern**

June - August 2019

*North Reading, MA, USA*

- Developed an inventory-control ML/computer vision prototype aimed for Amazon's fulfillment centers;
- Implemented an image data collection pipeline with camera hardware, Python, and AWS S3 to build data sets from scratch;
- Trained and evaluated CNN and R-CNN classifier and detector machine learning models on aggressively small datasets with Python, AWS SageMaker, and PyTorch (98%+ classifier accuracy);
- Participated in SCRUMs, and code reviews, delivered technical presentations, and wrote wiki documentation.

### **Deloitte — Solution Associate**

May - September 2018

*Montreal, Qc, Canada*

- Developed features for a cloud-based CRM sales product sold to a multi-billion-dollar energy company.
- Implemented data integration solution between Salesforce CRM and accounting systems using Event-Driven Architecture, Mulesoft Rest APIs, and Apex programming (Java-like OOP language);
- Implemented back-end features for record manipulation with Apex, SQL, and trigger events;
- Implemented front-end UI components in HTML, JavaScript, and the Salesforce Lightning Framework.

### **Ericsson — Software Developer**

May - September 2017

*Montreal, Qc, Canada*

- Worked on a Content Delivery Network solution used worldwide by internet and media providers;
- Handled automated testing and debugging in Java and JavaScript within Linux CentOS virtual machine environments (Tested over 8000 lines of code);
- Implemented automation of static code analysis reports with Bash, HTML, and Jenkins CI.

## PROJECTS AND LEADERSHIP ROLES

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### **GoLite Compiler in C and Java**

February - May 2020

Implemented a compiler in C which compiles a significant subset of the GoLang programming language into Java. Team project of 2 consists of over 11'000 lines of code, and 400 test cases. Used the Flex & Bison toolchain.

### **Machine Learning Projects**

September 2019 - Present

Liver and Tumor Segmentation (Ongoing): Re-implemented the U-Net algorithm, trained and evaluated it on a computed tomography liver dataset (CHAOS) for liver segmentation. Transferred the CompositionalNets algorithm towards a computed tomography liver tumour segmentation dataset (LiTS) for tumor localization.

Reinforcement Learning: Trained and evaluated DQN, DDPG, and REINFORCE agents for lunar lander and cartpole balancing environments. Evaluated neural network transfer learning across tasks for sample efficiency. Implemented in Python and used the PyTorch, and OpenAI's Gym libraries.

Movie Recommendation: Created graph-structured dataset from a movie review dataset (MovieLens). Trained and evaluated unsupervised random walks and graph neural networks (GraphSAGE) for rating prediction and movie recommendation (85% and 87% accuracy respectively). Implemented in Python and used the PyTorch, and Networkx libraries.

Fake News Classification: Trained and evaluated natural language processing models using Python, Scikit-Learn, and Keras for fake news classification on the LeadersPrize news article dataset.

**DNS Command Line Client in Java**

October 2018

Implemented a Domain Name Service (DNS) client in Java which queries for address, nameserver, mail exchange, and canonical name records.

**McHacks Committee**

September 2017 - March 2018

Worked on organizing McGill's largest hackathon which hosted over 500 students and 28 corporate sponsors.

**TECHNICAL SKILLS**

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Back-end software development, compilers, and machine learning/deep learning (2+ years)

Java (4+ years), Python (2+ years), C (2+ years), Bash, SQL, Apex, JavaScript, HTML

AWS (S3, SageMaker, EC2), Google Cloud, PyTorch, Scikit-Learn, Salesforce, Maven, Pip, Jenkins CI, Git, GitHub, Jira, Nginx, MySQL, VMware, Ubuntu, Red Hat.

**EDUCATION**

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**McGill University — M.Sc. Computer Science**

September 2019 - Present

*School of Computer Science*

*Montreal, Quebec, Canada*

Course Highlights: Reinforcement Learning, Natural Language Processing, Computer Vision, Intelligent Robotics, Deep Learning, Compiler Design in C, Java, and GoLang

Research Focus: Unsupervised and supervised object detection and semantic segmentation computer vision algorithms applied to medical imaging analysis

**McGill University — B.Eng. Computer Engineering**

September 2015 - May 2019

*Department of Engineering*

*Montreal, Quebec, Canada*

Course Highlights: Algorithms and Data Structures, Software Development in Java, Robotics Development in Java, Operating Systems in C, Telecommunication Networks, Computer Architecture, Microprocessors in C, Applied Machine Learning in Python, Computer Vision in Python