Issam Laradji **Curriculum vitae**

CONTACT INFORMATION

Vancouver, British Columbia, Canada issam.laradji@gmail.com

PROFILE

Issam Laradji is a research scientist at ServiceNow and an adjunct professor at the University of British Columbia. He focuses on building AI models that can help humans achieve their goals in the best possible way. With a postdoc from McGill University and a PhD and MSc from the University of British Columbia, his expertise includes natural language processing, computer vision, and optimization. Issam is passionate about making AI more accessible to everyone and leads an inclusive, thriving community built on collaboration and shared learning. His vision is to create an environment where committed teams can network and work together on ambitious projects to spark curiosity, drive innovation, and advance human's potential in what is possible.

EDUCATION

Ph.D. in Computer Science Sep 2014 - May 2020
- University of British Columbia (UBC)
- Supervisor: Mark Schmidt
- *GPA: 4.0/4.0*

M.Sc. in Information & Computer Science Sep 2012 to May 2014
- King Fahd University of Petroleum & Minerals (KFUPM)
- Thesis Topic: *New Algorithms for Deep Learning Machines*
- Advisor: Dr. Lahouari Ghouti
- *GPA: 4.0/4.0*

B.Sc. in Information & Computer Science Feb 2008 to Aug 2012
- King Fahd University of Petroleum & Minerals (KFUPM)

WORK EXPERIENCE

Feb 2023 to Present
Adjunct Professor at University of British Columbia.

Aug 2021 to Present
Staff Research Scientist at ServiceNow.

Aug 2020 to Aug 2021
Postdoctoral Researcher at McGill.

Jan 2021 to Aug 2021
Part-time Research Intern at ServiceNow.

Sep 2017 to Dec 2020
Part-time Research Intern at Element AI.

May 25, 2020 to Aug 03, 2020
Full-time Research Intern at Element AI.

May 16, 2018 to Oct 05, 2018
Full-time Research Intern at Element AI.

May 2019 to Apr 2020
Graduate Assistant (On-Campus) at University of British Columbia.

Jan 2016 to Aug 2016
Mitacs-Accelerate Graduate Research intern at University of British Columbia.

Sep 2014 to Aug 2018
Graduate Assistant (On-Campus) at University of British Columbia.

Workshops

A challenge chair for a CVPR2020 continual learning workshop. [1]
A co-organizer for the CVPR 2023 L3D-IVU workshop.
A co-organizer for the CVPR 2024 L3D-IVU workshop.

Coding Experience

Highly skilled at Python and Pytorch and have created and contributed over hundreds of influential Github repositories for robust, reproducible research and open-source products (https://github.com/IssamLaradji).

Research Community Service

Sep 2014 to Present
Reviewed papers for the following conferences and journals: AISTATS, TPAMI, ICML, NeurIPS, CDMA, BMVC, ICLR, WACV, AAAI, MAIS, CVPR, ECCV/ICCV, EMNLP, Neural Networks, and Neurocomputing.

Created and Organized the CVPR 2022 Workshop on Learning from Limited Labelled Data for Image and Video Understanding

Led the challenge for the CVPR 2020 Workshop on Continual Learning in Computer Vision

Recent Seminars

Sep 2020 to Present

Made tutorials and demos around best practices for building, managing, and visualizing large-scale experiments, large langauge models, 2D/3D Computer Vision and Optimization at UBC, Youtube, McGill, and KFUPM.

Intern & Student Supervision

Supervised Amirhossein Abaskohi, a student at University of British Columbia that led to multiple papers at NeurIPS workshop papers

Supervised Amrutha Ramesh , a student at University of British Columbia that led to multiple papers at NeurIPS workshop papers

Supervised Gaurav Sahu, a student at University of Waterloo that led to multiple papers at EMNLP

Supervised Yuhongze Zhou, a student at McGill that led to a spotlight paper at BMVC2022

Supervised Michael Noukhovitch, a student at MILA that led to a workshop paper at NeurIPS 2022

Co-supervised Alzayat Saleh, a student at James Cook University, that led to two journal papers at Nature Scientific Reports and a paper at Biomedical and Health Informatics

Supervised 4 McGill students Ragheed Qasmieh, Brendan Marks, Brad McBainz, Sami Hilal that led to a product that can efficiently recognize objects and their associated

[1] https://sites.google.com/view/clvision2020

nutritional information in a store through people's phones (2020 Winter)

Supervised 4 McGill students Xinhong Deng, Zheyu Liu, Wanqing Fang, Grace Chen that led to a library called Haven-AI that can efficiently help coders build, manage, and visualize large scale experiments (2020 Summer)

Supervised Lironne Kurzman, a UBC student, that led to a workshop paper at ICCV2019

Large-Scale Experiments

Created an influential codebase called Haven-AI (`https://github.com/haven-ai/haven-ai`) to help people launch, manage, and visualize thousands of reproducible experiments so that they get research papers published, win at competitions and develop great products.

Teaching Experience

McGill Capstone - Created large-scale experimentation framework	2020-2021
UBC CPSC 340 course - Machine Learning and Data Mining	2015 - 2016
UBC CPSC 210 course - Software Construction	2015
UBC CPSC 221 course - Basic Algorithms and Data Structures	2015
UBC CPSC 422 course - Advanced Artificial Intelligence	2015
UBC CPSC 322 course - Artificial Intelligence	2014

Awards and Scholarships

MITACS Postdoc Accelerate award	2020
Teaching assistant award at UBC CS department	2015
Big Data University Innovation Prize at SportsHack	2015
Google Summer of Code	2014
PhD Four Year Fellowship at UBC	2016-2020

Publications *

[1] Abaskohi, A., Carenini, G., Spandana, and Laradji, I. Fm-ds: Few-shot multimodal multihop data synthesis with knowledge distillation for question answering. *Submitted to CVPR 2025* (2024).

[2] Agarwal, S., Laradji, I. H., Charlin, L., and Pal, C. Litllm: A toolkit for scientific literature review. *Submitted to AAAI Demo 2025* (2024).

[3] Alzayat, S., Laradji, I. H., Konovalov, D. A., Bradley, M., Vazquez, D., and Marcus, S. A realistic fish-habitat dataset to evaluate algorithms for underwater visual analysis. *Scientific Reports (Nature)* (2020).

[4] Asad, R., Harikandeh, R. B., Laradji, I. H., Le Roux, N., and Vaswani, S. Surrogate minimization: An optimization algorithm for training large neural networks with model parallelism. In *OPT 2023: Optimization for Machine Learning* (2023).

[5] Asad, R., and Laradji, I. Fast convergence of softmax policy mirror ascent for bandits tabular mdps. In *NeurIPS OPT ML Workshop 2024* (2024).

[6] Assouel, R., Marty, T., Caccia, M., Laradji, I. H., Drouin, A., Rajeswar, S., Palacios, H., Cappart, Q., Vazquez, D., Chapados, N., et al. The unsolved challenges of llms as generalist web agents: A case study. In *NeurIPS 2023 Foundation Models for Decision Making Workshop* (2023).

[7] Babanezhad, R., Laradji, I. H., Shafaei, A., and Schmidt, M. Masaga: a linearly-convergent stochastic first-order method for optimization on manifolds. *ECML* (2018).

[8] Beckham, C., Laradji, I., Rodriguez, P., Vazquez, D., Nowrouzezahrai, D., and Pal, C. Challenges in leveraging gans for few-shot data augmentation. *CoLLAs* (2022).

[9] Botzer, N., Vasquez, D., Weninger, T., and Laradji, I. Tk-knn: A balanced distance-based pseudo labeling approach for semi-supervised intent classification. *EMNLP* (2023).

[10] Caccia, M., Rodriguez, P., Ostapenko, O., Normandin, F., Lin, M., Caccia, L., Laradji, I., Rish, I., Lacoste, A., Vazquez, D., et al. Online fast adaptation and knowledge accumulation: a new approach to continual learning. *NeurIPS* (2020).

[11] Chen, Z., Wu, J., Wang, W., Su, W., Chen, G., Xing, S., Zhong, M., Zhang, Q., Zhu, X., Lu, L., et al. Internvl: Scaling up vision foundation models and aligning for generic visual-linguistic tasks. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition* (2024), pp. 24185–24198.

[12] Drouin, A., Gasse, M., Caccia, M., Laradji, I. H., Del Verme, M., Marty, T., Boisvert, L., Thakkar, M., Cappart, Q., Vazquez, D., et al. Workarena: How capable are web agents at solving common knowledge work tasks? *ICML 2024* (2024).

[13] Greff, K., Belletti, F., Beyer, L., Doersch, C., Du, Y., Duckworth, D., Fleet, D. J., Gnanapragasam, D., Golemo, F., Herrmann, C., et al. Kubric: A scalable dataset generator. *Accepted at CVPR2022* (2022).

[14] Huang, G., Laradji, I., Vazquez, D., Lacoste-Julien, S., and Rodriguez, P. A survey of self-supervised and few-shot object detection. *TPAMI* (2022).

[15] Kurzman, L., Vazquez, D., and Laradji, I. Class-based styling: Real-time localized style transfer with semantic segmentation. *ICCV Workshop* (2019).

[16] Lacoste, A., Rodríguez, P., Branchaud-Charron, F., Atighehchian, P., Caccia, M., Laradji, I., Drouin, A., Craddock, M., Charlin, L., and Vázquez, D. Synbols: Probing learning algorithms with synthetic datasets. *NeurIPS* (2020).

[17] Laradji, I. *Where are the objects?: weakly supervised methods for counting, localization and segmentation.* PhD thesis, 2020.

[18] Laradji, I., Rodriguez, P., Branchaud-Charron, F., Lensink, K., Atighehchian, P., Parker, W., Vazquez, D., and Nowrouzezahrai, D. A weakly supervised region-based active learning method for covid-19 segmentation in ct images. *arXiv* (2020).

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[20] Laradji, I., Rodríguez, P., Vazquez, D., and Nowrouzezahrai, D. Ssr: Semi-supervised soft rasterizer for single-view 2d to 3d reconstruction. *ICCV Workshop* (2021).

[21] Laradji, I., Saleh, A., Rodriguez, P., Nowrouzezahrai, D., Azghadi, M. R., and Vazquez, D. Affinity lcfcn: Learning to segment fish with weak supervision. *Nature Scientific Reports* (2020).

[22] Laradji, I. H. *New Algorithms for Deep Learning Machines*. PhD thesis, King Fahd University of Petroleum and Minerals, 2014.

[23] Laradji, I. H., Alshayeb, M., and Ghouti, L. Software defect prediction using ensemble learning on selected features. *IST (Elsevier)* (2015).

[24] Laradji, I. H., and Babanezhad, R. M-adda: Unsupervised domain adaptation with deep metric learning. *DAVU* (2020).

[25] Laradji, I. H., Ghouti, L., and Khiari, E.-H. Perceptual hashing of color images using hypercomplex representations. *ICIP* (2013).

[26] Laradji, I. H., Ghouti, L., Saleh, F., and AlTurki, M. A. Sparse single-hidden layer feedforward network for mapping natural language questions to sql queries. *ICANN* (2014).

[27] Laradji, I. H., Rostamzadeh, N., PINHEIRO, P. H. O., BERMUDEZ, D. M. V., and SCHMIDT, M. W. Counting objects in images based on approximate locations, 2020.

[28] Laradji, I. H., Rostamzadeh, N., Pinheiro, P. O., Vazquez, D., and Schmidt, M. Where are the blobs: Counting by localization with point supervision. *ECCV* (2018).

[29] Laradji, I. H., Rostamzadeh, N., Pinheiro, P. O., Vázquez, D., and Schmidt, M. Instance segmentation with point supervision. *ICIP* (2019).

[30] Laradji, I. H., Rostamzadeh, N., Pinheiro, P. O., Vazquez, D., and Schmidt, M. Proposal-based instance segmentation with point supervision. *ICIP* (2020).

[31] Laradji, I. H., Salahadin, M., and Ghouti, L. Xml classification using ensemble learning on extracted features. *ACM SRC* (2014).

[32] Laradji, I. H., Saleh, A., Rodriguez, P., Nowrouzezahrai, D., Azghadi, M. R., and Vazquez, D. Weakly supervised underwater fish segmentation using affinity lcfcn. *Scientific Reports 11*, 1 (2021), 1–10.

[33] Laradji, I. H., Schmidt, M., Pavlovic, V., and Kim, M. Efficient deep gaussian process models for variable-sized inputs. *IJCNN* (2019).

[34] Laradji, I. H., Vazquez, D., and Schmidt, M. Where are the masks: Instance segmentation with image-level supervision. *BMVC* (2019).

[35] Lensink, K., Laradji, I., Law, M., Barbano, P. E., Parker, S. N., Haber, E., et al. Segmentation of pulmonary opacification in chest ct scans of covid-19 patients. *Academic Radiology* (2020).

[36] Loizou, N., Vaswani, S., Laradji, I., and Lacoste-Julien, S. Stochastic polyak step-size for sgd: An adaptive learning rate for fast convergence. *AISTATS* (2020).

[37] Lomonaco, V., Pellegrini, L., Rodriguez, P., Caccia, M., She, Q., Chen, Y., Jodelet, Q., Wang, R., Mai, Z., Vazquez, D., et al. Cvpr 2020 continual learning in computer vision competition: Approaches, results, current challenges and future directions. *Artificial Intelligence* (2020).

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[39] Mishra, N., Sahu, G., Calixto, I., Abu-Hanna, A., and Laradji, I. Llm aided semi-supervision for efficient extractive dialog summarization. In *Findings of the Association for Computational Linguistics: EMNLP 2023* (2023), pp. 10002–10009.

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[43] Nutini, J., Schmidt, M., Laradji, I., Friedlander, M., and Koepke, H. Coordinate descent converges faster with the gauss-southwell rule than random selection. *ICML* (2015).

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[57] Sahu, G., Vechtomova, O., Bahdanau, D., and Laradji, I. H. Promptmix: A class boundary augmentation method for large language model distillation. *EMNLP* (2023).

[58] Sahu, G., Vechtomova, O., and Laradji, I. H. Enchancing semi-supervised learning for extractive summarization with an llm-based pseudolabeler. *EMNLP* (2023).

[59] Sai Rajeswar, Issam Laradji, P. R. D. V. A. C. Consistency-cam: Towards improved weakly supervised semantic segmentation. *BMVC* (2022).

[60] Saleh, A., Laradji, I. H., Lammie, C., Vazquez, D., Flavell, C. A., and Azghadi, M. R. A deep learning localization method for measuring abdominal muscle dimensions in ultrasound images. *IEEE Journal of Biomedical and Health Informatics* (2021).

[61] Vaswani, S., Laradji, I., Kunstner, F., Meng, S. Y., Schmidt, M., and Lacoste-Julien, S. Adaptive gradient methods converge faster with over-parameterization (and you can do a line-search). *arXiv* (2020).

[62] Vaswani, S., Mishkin, A., Laradji, I., Schmidt, M., Gidel, G., and Lacoste-Julien, S. Painless stochastic gradient: Interpolation, line-search, and convergence rates. *NeurIPS* (2019).

[63] Yuhongze Zhou, Issam Hadj Laradji, L. Z. D. N. Osm: An open set matting framework with ood detection and few-shot learning. *BMVC* (2022).