Frédéric Branchaud-Charron

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EDUCATION

SHERBROOKE UNIVERSITY
MSc by Research in Computer Science
Expected Dec 2018 | Sherbrooke, QC
GPA: 3.92/4.3

BSc in Computer Science
Dec 2016 | Sherbrooke, QC
Dean's List (2 times)
GPA: 3.99 / 4.3

LINKS

Github:// **Dref360**
LinkedIn:// **fredericbranchaudcharron**

OPEN-SOURCE

KERAS
Collaborator, Member • Developed Sequence API • SSIM Loss • Tensorflow backend • **keras-contrib** • **keras-transform**
TENSORFLOW
Keras Model • Estimator
KERAS-PREPROCESSING
Project manager

COURSEWORK

GRADUATE
Advanced Machine Learning
Time series
Open Source Software Engineering
(Teaching Asst)
Assembly and Python programming

UNDERGRADUATE
Artificial Intelligence
Functional Programming
Computer Graphics

SKILLS

PROGRAMMING
Over 5000 lines:
Python • Pytorch • Tensorflow • C# • LaTeX
Over 1000 lines:
Haskell • PowerShell
Familiar:
Java • C++ • F# • Bash • SQL • MongoDB • JS

EXPERIENCE

ELEMENT AI | Applied Research Scientist
Jan 2019 – | Montréal, QC

- Implemented state-of-the-art methods for active learning and released it as **BaaL**, our active learning library in Python.
- Leverage the cognitive abilities of annotators to help data scientists better understand their dataset and model.

SHERBROOKE UNIVERSITY | Research internship
May 2016 – Aug 2016 | Waterloo, ON

- Used siamese network for vehicle matching.
- Developed algorithms for blob separation.
- Developed a saliency detection model 3x faster than the previous state-of-the-art with the same accuracy.

GENETEC | Software engineer internship
Sep 2015 – Dec 2015 | Montréal, QC
Jan 2015 – Apr 2015 | Montréal, QC
May 2014 – Aug 2014 | Montréal, QC

- Backend C# development.
- Cloud setup automation with PowerShell.
- Reduced building time by 80%.

RESEARCH

VIDEOS & IMAGES THEORY AND ANALYTICS LABORATORY OF SHERBROOKE UNIVERSITY. | MSc student
Jan 2017 – Present | Sherbrooke, QC
Worked with **Prof Pierre-Marc Jodoin** and **Miovision inc.** to improve current methods of localization in low frame-rate settings. I worked on high-level features like centroid estimation, direction estimation and moving object estimation. I also worked on a novel complexity metric which closely matches the possible accuracy of a CNN without training a classifier.

VIDEOS & IMAGES THEORY AND ANALYTICS LABORATORY OF SHERBROOKE UNIVERSITY. | Undergrad student
Sep 2016 – Dec 2016 | Sherbrooke, QC
I developed multiple deep learning models to perform background subtraction. I implemented a SSIM loss and submitted it to **keras-contrib**. The results are available on my **Github repository**.

SCHOLARSHIPS

2017 MITACS Acceleration
2017 FRQNT, MSc Scholarship
2017 Hydro-Québec, Recruitment Scholarship
2015-2016 NSERC, Experience Awards (IUSRA)

ACADEMIC EXPERIENCE

2019 Spectral metric for dataset complexity assessment
F. Branchaud-Charron & al. in proceedings at CVPR, 2019
2017 MIO-TCD: A new benchmark dataset for vehicle classification and localization
Z. Luo, F. Branchaud-Charron & al. in press at IEEE Transactions on Image Processing, 2018
2017 Reviewer MICCAI 2017
2017 Co-organized **TSWC**, presented at CVPR 2017