# Dominique Piché-Meunier

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## EDUCATION

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**M.S. in Electrical Engineering** 2021-2023
*Université Laval, Québec*
Thesis : Deep single image depth of field estimation
Supervisor : Jean-François Lalonde (Université Laval)
Co-supervisor : Yannick Hold-Geoffroy (Adobe Research)
GPA : 4.33/4.33

**B.S. in Engineering Physics** 2017-2021
*Université Laval, Québec*
GPA : 4.21/4.33

## EXPERIENCE

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**Machine Learning Engineer - Computer Graphics and Computer Vision** 2024
*Adobe, 3DI Tech Transfer Team, San Francisco, CA*

- Training, evaluating, and deploying machine learning models for use in Substance 3D products
- Building and contributing to shared technology platforms that accelerate machine learning research and development
- Collaborating with the research and product departments to facilitate the productization of state-of-the-art machine learning technologies

**Research Intern - Computer Vision** 2023
*Adobe, 3DI Tech Transfer Team, San Francisco, CA*
Supervisors : J Eisenman, Yannick Hold-Geoffroy

- Benchmarking machine learning methods developed by the research department
- Fine-tuning, optimizing and converting models for production
- Facilitating the integration of machine learning methods into products

**Teaching Assistant - Computational Photography** 2023
*Université Laval, Québec*
Course : GIF-7105 Computational photography

- Answering students' questions in person and on the forum
- Grading homework and exams

**Research Scientist Intern - Computer Vision** 2022
*Adobe Reseach, San Jose, CA (remote)*
Supervisors : Yannick Hold-Geoffroy, Jianming Zhang, Jean-François Lalonde

- Generating a dataset of images with a realistic synthetic depth of field effect
- Training a neural network to estimate camera parameters related to the depth of field

- Writing a scientific paper (ICCV)

**Research Assistant - Computer Vision and Artificial Intelligence** 2020-2021
*Institute Intelligence and Data (IID), Université Laval, Québec*
Supervisors : Jean-François Lalonde and Yannick Hold-Geoffroy

- Training a neural network to estimate camera parameters from a single image
- Evaluating the network's performance using a perceptual measure
- Writing a scientific paper (TPAMI)

**Research Intern - Computer Vision and Artificial Intelligence** 2020
*Institute Intelligence and Data (IID), Université Laval, Québec*
Supervisors : Jean-François Lalonde and Yannick Hold-Geoffroy

- Generating a dataset of images containing inserted virtual objects using Blender
- Conducting a user study to measure humans' perception to errors in camera calibration
- Participating in the redaction of a scientific paper (TPAMI)

**Research Assistant - Medical Physics** 2019-2020
*Medical Physics Research Group (GRPM), Université Laval, Québec*
Supervisor : Luc Beaulieu

- Participating in the design of a robot to assist medical staff in ultrasound guided brachytherapy
- Calibrating and testing the robot in preparation for clinical use

**Research Intern - Medical Physics** 2019
*Medical Physics Research Group (GRPM), Université Laval, Québec*
Supervisors : Luc Beaulieu and Philippe Després

- Adapting a robotic arm for dosimetry using 3D printing
- Designing and documenting a python module to control an industrial 6 DOF robotic arm
- Collecting dosimetry data with the robot that is used to train machine learning algorithms
- Analyzing and presenting the data, in a report and in a poster at the Journée scientifique des étudiants

# PUBLICATIONS

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Dominique Piché-Meunier, Yannick Hold-Geoffroy, Jianming Zhang, Jean-François Lalonde. *Lens Parameter Estimation for Realistic Depth of Field Synthesis.* International Conference on Computer Vision (ICCV), 2023.

François-Alexandre Tremblay, Dominique Piché-Meunier, Louis Dubois. *Multi-objective optimization for designing salary structures.* International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR), 2022.

Yannick Hold-Geoffroy, Dominique Piché-Meunier, Kalyan Sunkavalli, Jean-Charles Bazin, François Rameau, Jean-François Lalonde. *A Deep Perceptual Measure for Lens and Camera Calibration.* IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2021. (conditionally accepted)

Erik Buch Jørgensen, Jacob Graversen Johansen, Joakim Overgaard, Dominique Piché-Meunier, Daline Tho, Haydee Maria Linares Rosales, Kari Tanderup, Luc Beaulieu, Gustavo Kertzscher, Sam Beddar. *A high-Z inorganic scintillator–based detector for time-resolved in vivo dosimetry during brachytherapy.* Medical Physics, 2021.

Jacob Graversen Johansen, Erik Buch Jørgensen, Joakim Overgaard, Dominique Piché-Meunier, Haydee Maria Linares Rosales, Daline Tho, Kari Tanderup, Sam Beddar, Luc Beaulieu, Gustavo Kertzsche. *Characterisation of an inorganic scintillation detector system for time resolved in vivo dosimetry.* World Congress of Brachytherapy, 2021.

## SCHOLARSHIPS

- **NSERC Canada Graduate Scholarships - Master's** 2021
  For academic excellence and research potential *17500*$
- **FRQNT Québec Graduate Scholarships - Master's** 2021
  For academic excellence and research potential *35000*$
- **NSERC Undergraduate Student Research Awards** 2020
  For academic excellence *4500*$
- **FRQNT Supplements of the Undergraduate Student Research Awards** 2020
  For academic excellence *1500*$
- **NSERC Undergraduate Student Research Awards** 2019
  For academic excellence *4500*$
- **FRQNT Supplements of the Undergraduate Student Research Awards** 2019
  For academic excellence *2000*$
- **Hydro-Québec Entrance Scholarship** 2017
  For academic excellence *3000*$
- **Franco Rasetti Entrance Scholarship** 2017
  For academic excellence *1500*$
- **Desjardins Foundation Scholarship** 2016
  For academic excellence and community engagement *1000*$

## LANGUAGES

**Languages** : french (native), english (fluent)