

Joseph Boyd

Deep Learning Specialist

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 <https://github.com/jcboyd>

ABOUT

I have 7 years of experience in machine learning research, programming, and teaching. My goal is to put machine learning at the service of science, technology, and health.

WORK EXPERIENCE

JAN 2021 – PRESENT

 CentraleSupélec, France

Postdoctoral Researcher

→ Generative models for histopathology applications.
→ Teaching assistant/lecturer in VIC - Vision par Ordinateur.
Ref: Dr. Vakalopoulou · maria.vakalopoulou@centralesupelec.fr

OCT 2016 – JUN 2020

 MINES ParisTech / Institut Curie, France

Doctoral Researcher

→ Deep learning for computational phenotyping
→ Manuscript: pastel.archives-ouvertes.fr/tel-02928984
→ Teaching assistant/lecturer in various courses.
Ref: Dr. Chloé Azencott · chloe-agathe.azencott@curie.fr

FEB 2015 – JUL 2015

 CERN, Switzerland

Master Thesis Intern

→ Automatic metadata extraction with NLP.
→ Manuscript: cds.cern.ch/record/2039361
Ref: Dr. Gilles Louppe · g.louppe@uliege.be

JUL 2014 – SEP 2014

 United Nations ICC, Switzerland

Summer Intern

→ Survey, design and configuration of management “dashboard” using business intelligence (BI) softwares.
Ref: Mr. Djamel Kacel · kacel@unicc.org

NOV 2010 – AUG 2013

 AECOM, Australia

Mathematician

→ Discrete-event simulation programmer for supply chain systems at *Fortune 500* consultancy firm.
Ref: Mr. Susheel Prabhakar · susheel.prabhakar@aecom.com

EDUCATION

2016 – 2020 **Doctor of Philosophy**
Bioinformatics
 MINES ParisTech, France

2013 – 2015 **Master of Science**
GPA: 5.43(/6)
Computer Science
EPFL EPFL, Switzerland

2007 – 2010 **Bachelor of Science**
GPA: 6.375(/7)
Mathematics / IT
QUT QUT, Australia

TEACHING

NOV 2022 – MARCH, 2023 · **CentraleSupélec** · VIC - *Introduction to Computer Vision* · TA

DEC 2021 – MARCH, 2022 · **CentraleSupélec** · VIC - *Introduction to Computer Vision* · TA

OCT 2019 · **Paris Sciences & Lettres** · *Génomique et Bioinformatique: Une Introduction* · Guest Lecturer

NOV 2018 · **MINES ParisTech** · *Deep Learning For Image Analysis* · TA

NOV 2018 · **Paris Sciences & Lettres** · *Génomique et Bioinformatique: Une Introduction* · TA

MAR 2018 · **MINES ParisTech** · *Large-Scale Machine Learning and Data Mining* · TA

OCT 2017 · **Paris Sciences & Lettres** · *Génomique et Bioinformatique: Une Introduction* · Guest Lecturer

OCT 2017 – JAN 2018 · **CentraleSupélec** · *Introduction to Machine Learning* · TA

MAY 2017 · **Institut Curie** · *Deep Learning with TensorFlow* · Workshop

MAR 2017 · **MINES ParisTech** · *Large-Scale Machine Learning and Data Mining* · TA

PUBLICATIONS

Fillioux, L., Boyd, J. et al. (2023) **Structured State Space Models for Multiple Instance Learning in Digital Pathology** *MICCAI 2023* (in press).

Boyd, J. et al. (2022). **Region-guided CycleGANs for Stain Transfer in Whole Slide Images** *MICCAI 2022*.

Dahan, C., Boyd, J. (2022). **Artifact Removal in Histopathology Images** *ACML 2022, ML4MI workshop*.

Boyd, J. et al. (2021). **Self-Supervised Representation Learning using Visual Field Expansion on Digital Pathology**. In *Proceedings of the IEEE/CVF International Conference on Computer Vision*.

Boyd, J. (2020). **Deep learning for computational phenotyping in cell-based assays**. *PhD Thesis, MINES Paristech, Paris*.

Boyd, J. et al. (2020). **Experimentally-generated ground truth for detecting lymphocytes in an image-based immunotherapy screen**. In *2020 IEEE 17th International Symposium on Biomedical Imaging (ISBI 2020)*. IEEE.

Boyd, J. C. et al. (2019) **Domain-invariant features for mechanism of action prediction in a multi-cell-line drug screen**. *Bioinformatics*.

Naylor, Boyd et al. (2019). **Predicting residual cancer burden in a triple negative breast cancer cohort**. *16th International Symposium on Biomedical Imaging*.

Khalifaoui, B., Boyd, J., & Vert, J. P. (2019). **Adaptive structured noise injection for shallow and deep neural networks**.

Boyd, J. et al. (2018). **Analysing double-strand breaks in cultured cells for drug screening applications by causal inference**. In *2018 IEEE 15th International Symposium on Biomedical Imaging (ISBI 2018)*. IEEE.

Boyd, J. (2015). **Automatic Metadata Extraction-The High Energy Physics Use Case** (Masters dissertation, Ecole Polytechnique, Lausanne)

→ scholar.google.com/citations?user=fvzFcqYAAAAJ

AWARDS

→ **Second Best Paper Award** at ICCV Workshop CD-path 2021

→ CVPR 2023 outstanding reviewer award

→ QUT Dean's List Award 2008, Head of School's Award for Excellence in Mathematics 2008, Dean's Merit Award 2008, 2009, 2010.

SKILLS

CODING	PYTHON, C++, MATLAB, BASH, SQL
PYTHON	sklearn, Keras, PyTorch
DL/ML	CNNs, RNNs, R-CNN, GANs
DEVOPS	Docker, git, conda
LANGUAGES	English, French, Spanish