ALICE BIZEUL

PhD Candidate at ETH Zürich & ETH AI Center

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PhD candidate at the ETH AI Center, ETH Zürich looking for **research internship opportunities**. I am particularly excited about topics related to **unsupervised, self-supervised representation learning and generative modeling**. Beyond proposing novel technical contributions, **my current research focuses on better understanding foundation models.**

EDUCATION

PhD Candidate

ETH Zürich, ETH AI Center

September 2021 - Ongoing | Zurich, CH

- **PhD. advisors**: Prof. Julia Vogt (Medical Data Science Group, ETH Zürich), Prof. Bernhard Schölkopf (Empirical Inference Group, Max Plank Institute)
- **Research Focus**: Unsupervised, Self-supervised Representation Learning, Generative Modeling

MSc Life Sciences Engineering

Swiss Federal Institute of Technology (EPFL)

September 2018 - August 2020 | Lausanne, CH

- **Master's Thesis**: Towards a representation of 3D MRI Images
- **Specialization**: Computational Neurosciences
- **GPA**: 5.5/6 (Graduated with high honors)

BSc Life Sciences Engineering

Swiss Federal Institute of Technology (EPFL)

September 2014 – June 2017 | Lausanne, CH

- **GPA**: 5/6

EXPERIENCE

Applied Scientist Intern

Amazon

November 2023 - April 2024 | Tübingen, Germany

During this internship at Amazon research, I will be working on conditional generation leveraging the power of diffusion models.

Collaborators : Oleksandr Vorobiov

Research Assistant

Massachusetts Institute of Technology (MIT)

February - August 2020 | Cambridge MA, USA

Towards a representation of 3D MRI images: For my Master's Thesis, I worked on the generation and representation of structural 3D MRI scans using deep generative models (GAN, VAE, SOM-VAE).

Supervisors : Prof. Satrajit Ghosh, Prof. Dimitri Van de Ville

Research Assistant

Defitech Chair in Brain-Machine Interface (CNPI - EPFL)

TECHNICAL SKILLS

Python | C/C++ | MatLab | Unix | R

Tensorflow | Pytorch | Scikit-Learn | Pandas | Numpy | Nibabel

Unity | WandB | Blender | Freesurfer

TEACHING

Teaching Assistant

ETH Zürich

2022 - 2023 | Zürich, CH

Medical Data Science for Healthcare

Teaching Assistant

Swiss Institute of Technology (EPFL)

2015 - 2018 | Lausanne, CH

Physics III, IV; Biology I, II

DISTINCTIONS

ETH AI Center Doctoral Fellowship

ETH AI Center

September 2021 | Zurich, CH

CLS Doctoral Fellowship (Declined)

Max Planck Institute - ETH Zürich

September 2021 | Tübingen, DE

Palantir Women in Tech Scholarship

Palantir Technologies

April 2019 | London, UK

LANGUAGES

French - Mother Tongue

English - Fluent

Dutch - Elementary

September 2018 - January 2019 Lausanne, CH

Development of an EEG processing algorithm for the neurophysiological evaluation of motor control and movement disorders

Supervisors : Dr. Ricardo Chavarriaga, Prof. José del R. Millán

Project Manager

Junior Entreprise (EPFL)

September 2018 - February 2019 Lausanne, CH

Member of the Junior Entreprise EPFL association as a project manager

R&D Engineer Intern

GTX Medical

February 2018 - July 2018 Eindhoven, NL

Development of an EMG automatic detection algorithm to improve spinal cord injury rehabilitation therapy

Supervisors: André Kleibeuker, Davide Lombardo

Research Assistant

Vision Institute

September 2017 - February 2018 Paris, FR

Development of an experimental setup combining fMRI & VR to better understand cerebral bases of visual processing & spatial cognition

Supervisors : Prof. Stephen Ramanöel, Prof. Angelo Arleo

PUBLICATIONS

Conference

- **Bizeul, Alice** and Allen Carl (2023). "SimVAE: Narrowing the Gap between Discriminative Generative Representation Learning". In: *Under review*.
- Daunhawer, Imant et al. (2023). "Identifiability Results for Multimodal Contrastive Learning". In: *International Conference on Learning Representations*.
- Ramanoël, Stephen, Marion Durteste, **Bizeul, Alice**, Anthony Ozier-Lafontaine, Marcia Bécu, Nicolas Rossignol, et al. (2019). "Distinct cerebral structures are involved in landmark-vs. geometry-based spatial navigation". In: *Society for Neuroscience*.

Journal

- Ramanoël, Stephen, Marion Durteste, **Bizeul, Alice**, Anthony Ozier-Lafontaine, Marcia Bécu, José-Alain Sahel, et al. (2022). "Selective neural coding of object, feature, and geometry spatial cues in humans". In: *Human Brain Mapping* 43.17, pp. 5281–5295.

Workshops & Dataset

- **Bizeul, Alice**, Imant Daunhawer, et al. (2023). *Multiview3DIdent: a multi-view identifiability benchmark from controlled ground-truth factors*. CLeaR 2023 Dataset Track.

A full-list of publications is available on Google Scholar

REVIEW SERVICES

Neurips '22 | ICLR '23 | ICML '23 | Neurips '23

STUDENT SUPERVISION

Image-text pre-training for improved ICD code prediction

Master's Thesis

Ongoing Zürich, CH

Identifiability of shared content factors in real-world multi-modal datasets

Semester project

Ongoing Zürich, CH

COMMUNITY SERVICES

ETH AI Center Post-Doctoral Symposium

ETH AI Center

2021-2023 Zürich, CH

Supporting the ETH AI Center in post-doctoral candidates' screening, selection, interviewing, and hiring.

RELEVANT COURSES

Machine Learning | Deep Learning | Probabilistic Machine Learning | Applied Data Analysis | Calculus | Probability & Statistics | Algebra | Biomedical Signal Processing | Artificial Neural Networks | Signals & Systems