

# Maksym Andriushchenko – Curriculum Vitae

## PERSONAL DATA

Site: <https://andriushchenko.me/>  
Email: [maksym@andriushchenko.me](mailto:maksym@andriushchenko.me)

Scholar: <https://scholar.google.com/citations?user=ZNtuJYoAAAAJ>  
Github: <https://github.com/max-andr/>

## EDUCATION

**École Polytechnique Fédérale de Lausanne (EPFL), Switzerland** (*Sep 2019 - now*)  
PhD student in Computer Science advised by Nicolas Flammarion

**Saarland University, Germany** (*Oct 2016 – Aug 2019*)  
Master's Degree in Computer Science advised by Matthias Hein from the University of Tübingen

**Dnipro National University of Railway Transport, Ukraine** (*Sep 2012 – June 2016*)  
Bachelor's Degree in Software Engineering — *with honors*

## EMPLOYMENT

**Google Research**, New York Office, US  
**Time (expected):** November 2023 – February 2024  
**Role:** Research intern supervised by Srinadh Bhojanapalli

**Adobe Research**, Media Intelligence Lab, remote  
**Time:** July 2021 – October 2021  
**Role:** Research intern supervised by John Collomosse

**PrivatBank**, Dnipro, Ukraine  
**Time:** November 2015 – June 2016  
**Role:** Part-time data scientist (predictive modeling, e-commerce personalization)

## AWARDS

**Scholarships and Grants**  
**Google PhD fellowship 2022-2025 (\$80k per year for up to 3 years)**  
**Open Philanthropy AI PhD Fellowship 2022-2024 (\$10k per year for travel/equipment)**  
**Google Research Collab 2022-2023 (\$80k for one year + \$20k in cloud compute)**  
EDIC PhD fellowship from EPFL for the first year (\$60k)  
DAAD MSc scholarship for 2 years to study at Saarland University (\$20k)

**Awards**  
ICLR'21 Security & Safety in ML Systems Workshop: **Best Paper Honorable Mention Prize**  
Swiss Machine Learning Day: **best paper award** for “*Provably Robust Boosted Decision Stumps and Trees against Adversarial Attacks*” (also published at NeurIPS'19)

## ACADEMIC SERVICE

**Reviewer**  
NeurIPS'23, ICML'23, NeurIPS'22 (**top reviewer**), ICML'22, NeurIPS'21, ICML'21, CVPR'21, ICLR'21 (**outstanding reviewer**), NeurIPS'20 (**top 10% reviewers**)

**Program committee in workshops**  
**NeurIPS'23** “R0-FoMo Workshop on Robustness of Few-shot and Zero-shot Learning in Foundation Models”, **NeurIPS'23** “Workshop on Distribution Shifts: New Frontiers with Foundation Models”, **ICML'23** “2nd ICML Workshop on New Frontiers in Adversarial ML”, **ICLR'23** “Workshop on Pitfalls of Limited Data and Computation for Trustworthy ML”, **NeurIPS'22** “Workshop on Distribution Shifts”, **NeurIPS'22** “ML Safety Workshop”, **ICML'22** “New Frontiers in Adversarial Machine Learning”, **ICML'22** “Principles of Distribution Shift”, **NeurIPS'21**: “Distribution Shifts: Connecting Methods and Applications”, **ICML'21** “Uncertainty and Robustness in Deep Learning”, **CVPR'21** “Adversarial ML in Real-World Computer Vision Systems”, **ICLR'21** “Robust and Reliable ML in the Real World”, “Security and Safety in ML Systems”, **ICML'20** “Uncertainty and Robustness in Deep Learning”, **CVPR'20** “Adversarial ML in Computer Vision”, **ICLR'20** “Towards Trustworthy ML” (**best reviewer award**)

**Participant**  
[Robust AI 4-day workshop](#) organized by Airbus AI Research and TNO (January 2021)

**Outreach activities**  
National coordinator for Switzerland at [#ScienceForUkraine](#)  
Coordinator for Switzerland and admission officer at the [Ukrainian Global University](#)  
AI and STEM workshop at a [summer camp](#) for displaced Ukrainian children in Romania

## STUDENT SUPERVISION

<b>Hichem Hadhri</b>	<b>MSc project (2023):</b> work in progress
<b>Hao Zhao</b>	<b>MSc thesis (2023):</b> work in progress
<b>Tiberiu Musat</b>	<b>BSc project (2023):</b> work in progress
<b>Francesco d'Angelo</b>	<b>PhD semester project (2023):</b> “Understanding the role of weight decay in deep learning”
<b>Théau Vannier</b>	<b>MSc project (2023):</b> “Understanding the training instability of transformers”
<b>Joshua Freeman</b>	<b>BSc project (2022, unofficial):</b> “Automatic recognition of unexploded ordnance using transfer learning”
<b>Jana Vuckovic</b>	<b>MSc project (2022):</b> “Rethinking the relationship between sharpness and generalization” (follow-up work is published at ICML'23)
<b>Mehrdad Saberi</b>	<b>Summer internship (2021):</b> “Wasserstein adversarial training and perceptual robustness”
<b>Edoardo Debenedetti</b>	<b>MSc project (2021):</b> “RobustBench: a standardized adversarial robustness benchmark” (published at NeurIPS'21 Datasets and Benchmarks Track)
<b>Klim Kireev</b>	<b>PhD semester project (2020):</b> “On the effectiveness of adversarial training against common corruptions” (published at UAI'22)
<b>Etienne Bonvin</b>	<b>MSc project (2020):</b> “Adversarial robustness of kernel methods”
<b>Oriol Barbany</b>	<b>MSc project (2019):</b> “Affine-invariant robust training”

## TEACHING EXPERIENCE

<b>EPFL</b>	<b>Probability &amp; Statistics 2021, 2022</b> (by E. Abbé), <b>Machine Learning 2020, 2021, 2022, 2023</b> (by M. Jaggi, N. Flammarion), <b>Advanced Algorithms 2020</b> (by M. Kapralov)
<b>MPI for Informatics</b>	<b>Machine Learning 2018-2019</b> (lecturer: B. Schiele)
<b>Saarland University</b>	<b>Neural Networks: Implementation and Application 2017</b> (lecturer: D. Klakow)

## SELECTED PUBLICATIONS

- M. Andriushchenko**, F. D'Angelo, A. Varre, N. Flammarion. Why Do We Need Weight Decay in Modern Deep Learning? (September 2023, under submission)
- M. Andriushchenko**, F. Croce, M. Müller, M. Hein, N. Flammarion. A Modern Look at the Relationship between Sharpness and Generalization (ICML 2023) [[paper](#)]
- M. Andriushchenko**, A. Varre, L. Pillaud-Vivien, N. Flammarion. SGD with Large Step Sizes Learns Sparse Features (ICML 2023) [[paper](#)]
- M. Andriushchenko**, N. Flammarion. Towards Understanding Sharpness-Aware Minimization (ICML 2022) [[paper](#)]
- M. Mosbach, **M. Andriushchenko**, D. Klakow. On the Stability of Fine-tuning BERT: Misconceptions, Explanations, and Strong Baselines (ICLR 2021) [[paper](#)]
- M. Andriushchenko**, N. Flammarion. Understanding and Improving Fast Adversarial training (NeurIPS 2020) [[paper](#)]
- M. Andriushchenko\***, F. Croce\*, N. Flammarion, M. Hein. Square Attack: a Query-Efficient Black-Box Adversarial Attack via Random Search (ECCV 2020) [[paper](#)]

## FULL PUBLICATION LIST

- M. Andriushchenko\***, F. D'Angelo\*, A. Varre, N. Flammarion. Why Do We Need Weight Decay in Modern Deep Learning? (September 2023, under submission)
- L. Adilova, **M. Andriushchenko**, M. Kamp, A. Fischer, M. Jaggi. Layer-Wise Linear Mode Connectivity (September 2023, under submission)
- S. Shin, D. Lee, **M. Andriushchenko**, N. Lee. The Effects of Overparameterization on Sharpness-Aware Minimization: An Empirical and Theoretical Analysis (September 2023, under submission)

**M. Andriushchenko**, D. Bahri, H. Mobahi, N. Flammarion. Sharpness-Aware Minimization Leads to Low-Rank Features (NeurIPS 2023) [[paper](#)]

K. Kireev, **M. Andriushchenko**, C. Troncoso, N. Flammarion. Transferable Adversarial Robustness for Categorical Data via Universal Robust Embeddings (NeurIPS 2023) [[paper](#)]

**M. Andriushchenko**, F. Croce, M. Müller, M. Hein, N. Flammarion. A modern look at the relationship between sharpness and generalization. (ICML 2023) [[paper](#)]

**M. Andriushchenko**, A. Varre, L. Pillaud-Vivien, N. Flammarion. SGD with large step sizes learns sparse features (ICML 2023) [[paper](#)]

K. Kireev\*, **M. Andriushchenko\***, N. Flammarion. On the effectiveness of adversarial training against common corruptions (UAI 2022, [ICLR'21 Workshop on Robust and Reliable Machine Learning in the Real World](#)) [[paper](#)]

Michael Rose, Sanita Reinsone, **Maksym Andriushchenko**, Marcin Bartosiak, Anna Bobak et al. #ScienceForUkraine: an Initiative to Support the Ukrainian Academic Community. “3 Months Since Russia’s Invasion in Ukraine”, February 26 – May 31, 2022 (SSRN, 2022) [[paper](#)]

**M. Andriushchenko**, N. Flammarion. Towards Understanding Sharpness-Aware Minimization (ICML 2022) [[paper](#)]

**M. Andriushchenko**, X. Rebecca Li, Geoffrey Oxholm, Thomas Gittings, Tu Bui, Nicolas Flammarion, John Collomosse. ARIA: Adversarially Robust Image Attribution for Content Provenance ([CVPR 2022 Workshop on Media Forensics](#)) [[paper](#)]

F. Croce, **M. Andriushchenko**, N. Singh, N. Flammarion, M. Hein. Sparse-RS: a versatile framework for query-efficient sparse black-box adversarial attacks (AAAI 2022) [[paper](#)]

F. Croce\*, **M. Andriushchenko\***, V. Schwag\*, E. Debenedetti\*, N. Flammarion, M. Chiang, P. Mittal, M. Hein. RobustBench: a standardized adversarial robustness benchmark (NeurIPS 2021 Datasets and Benchmarks Track, **Best Paper Honorable Mention Prize** at [ICLR 2021 Workshop on Security and Safety in Machine Learning Systems](#)) [[paper](#)]

M. Mosbach, **M. Andriushchenko**, D. Klakow. On the Stability of Fine-tuning BERT: Misconceptions, Explanations, and Strong Baselines (ICLR 2021) [[paper](#)]

**M. Andriushchenko\***, F. Croce\*, N. Flammarion, M. Hein. Square Attack: a query-efficient black-box adversarial attack via random search (ECCV 2020) [[paper](#)]

**M. Andriushchenko**, N. Flammarion. Understanding and Improving Fast Adversarial training (NeurIPS 2020) [[paper](#)]

**M. Andriushchenko**, M. Hein. Provably Robust Boosted Decision Stumps and Trees against Adversarial Attacks (NeurIPS 2019, contributed talk at [Workshop on Machine Learning with Guarantees](#)) [[paper](#)]

M. Hein, **M. Andriushchenko**, J. Bitterwolf. Why ReLU networks yield high-confidence predictions far away from the training data and how to mitigate the problem (oral at CVPR 2019, 5.6% acceptance rate, contributed talk at [ICML 2019 Uncertainty and Robustness in Deep Learning Workshop](#)) [[paper](#)]

F. Croce\*, **M. Andriushchenko\***, M. Hein. Provable Robustness of ReLU Networks via Maximization of Linear Regions (AISTATS 2019) [[paper](#)]

M. Mosbach\*, **M. Andriushchenko\***, T. Trost, M. Hein, D. Klakow. Logit Pairing Methods Can Fool Gradient-Based Attacks ([NeurIPS 2018 Workshop on Security in ML](#)) [[paper](#)]

M. Hein and **M. Andriushchenko**. Formal Guarantees on the Robustness of a Classifier Against Adversarial Manipulation (NeurIPS 2017) [[paper](#)]