Arber Zela

ML Postdoctoral Researcher, ELLIS Member

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Education

- **PhD in Computer Science**, University of Freiburg **03/2019 – 10/2025**
  ELLIS PhD Program, Co-supervised by Prof. Frank Hutter & Prof. Yee Whye Teh (Oxford)
  - **Thesis:** "Towards Robust, Efficient and Reproducible Neural Architecture Search"
  - **Key Output:** 16 top-tier papers (NeurIPS, ICLR, ICCV). Two ICLR Orals.
- **MSc Computer Science**, University of Freiburg **04/2015 – 02/2019**
- **BSc Electronic Engineering**, Polytechnic University of Tirana **10/2011 – 10/2014**

Experience

Research Scientist, ELLIS Institute Tübingen *01/2026 – Present*

Research Intern, Samsung AI Center Cambridge *06/2022 – 12/2022*
- Conducted research on self-supervised learning.

Visiting Researcher, University of Oxford *11/2021 – 02/2022*
- Collaborated with the StatML group on Bayesian Deep Learning.

Research Assistant, Machine Learning Lab Freiburg *09/2017 – 01/2019*

Technical Skills

- **Research Focus:** Global Optimization, LLM Efficiency, In-context Learning, Tabular Foundation Models, RNNs, AutoML
- **Languages:** Python, C/C++, Bash, LaTeX, Lua, R
- **Frameworks:** PyTorch, TensorFlow, Keras, Scikit-learn, NumPy
- **Tools:** Slurm, Git, vLLM, Weights & Biases, Vim, CMake, Make, gcc, valgrind, tmux

Selected Publications & Patents

Full list available on Google Scholar. Total: 16+ top-tier papers. 2500+ citations

1. **Arber Zela**, et al. *Understanding and Robustifying Differentiable Architecture Search*. ICLR 2020. **(Oral; Top 7%)**
2. Riccardo Grazzi*, Julien Siems*, **Arber Zela**, et al. *Unlocking State-Tracking in Linear RNNs Through Negative Eigenvalues*. ICLR 2025. **(Oral; Top 5.7%)**
3. Sheheryar Zaidi*, **Arber Zela***, et al. *Neural Ensemble Search for Uncertainty Estimation and Dataset Shift*. NeurIPS 2021.
4. Rhea Sanjay Sukthanker*, **Arber Zela***, et al. *Multi-objective Differentiable Neural Architecture Search*. ICLR 2025.
5. Andrej Schwanke*, Lyubomir Ivanov*, David Salinas, Fabio Ferreira, Aaron Klein, Frank Hutter, **Arber Zela***. *Improving LLM-based Global Optimization with Search Space Partitioning*. ICLR 2026.

Patents

- **US Patent 2025/0272576 A1**: Method and/or apparatus for architecture search.
- **US Patent 2022/0012636 A1**: Method for automated creation of machine learning systems.

Awards & Community Service

- **Awards:** Outstanding Reviewer (ICML '25), Best Poster (ACDL '20).
- **Organizer:** NAS Workshop @ ICLR '20-'21, ELLIS AutoML Seminars.
- **Reviewer:** Regular reviewer at NeurIPS, ICML, ICLR, TPAMI, JMLR.
- **Supervision:** Supervised 15+ MSc Theses and Projects at University of Freiburg

Software & Open Source

- **NASLib** (github.com/automl/NASLib): Creator and Lead Developer. A modular library for Neural Architecture Search.
- **AutoML** (github.com/automl): Contributed to several open source projects.