

# PRABHANT SINGH

Google Scholar — Github

PhD Student

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Location: Amsterdam,NL

## EDUCATION

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- **Eindhoven University of Technology** Eindhoven, NL  
*Ph.D. student, Research Area: Foundation models, Meta Learning, Transfer learning* 2022 - Present
- **University of Tartu** Tartu, Estonia  
*MSc, Computer Science with specialization in Data Science* Sept. 2017 – July. 2019
- **University of Delhi** Delhi, India  
*Bsc, Computer Science* Sept. 2014 – July. 2017

## EXPERIENCE

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- **Eindhoven University of Technology** Eindhoven, NL  
*Lecturer* September 2024 - Present
  - **Research** : Working on applying Optimal transport for better training of LLMs and Meta-learning, inspecting neural network training behavior, and automating the design of neural networks. My research interests include context learning, Multimodal AI, Transfer Learning, and Optimisation for neural network design.
- **KrampHub** Utrecht, NL  
*Senior Data and ML Engineer* September 2023 - August 2024
  - **ML Platform** : Built organisation wide LLM platform and onboarded Demand Forecasting for E-commerce store which resulted in **6 Million Euros** cost saved.
- **Sorbonne University** Paris, FR  
*Visiting Researcher* May 2023 - August 2023
  - **OT Distances**: Worked with researchers from LIP6 and Huawei on developing new algorithms for faster ML systems.
- **OpenML** Eindhoven, NL  
*Research Software Engineer* September 2019 - September 2023
  - **AI Research**: Researcher, Developed and published papers on Anomaly detection(Tabular and Graph), Clustering, Automated Machine Learning, Online Machine Learning, Streaming Models, Optimal Transport, Multimodal Data and Data-Centric ML in Top conferences and Journals like ECML, IJCAI, MLJ. Reviewed papers for NeurIPS, MLSYS, JMLR
  - **Researcher support**: Supported researchers in data engineering problems, trained researchers in best software engineering practices, and helped researchers build and publish research software.
  - **BOOST**: Developed educational platform for machine learning and biomedical image analysis
  - **OpenML**: Core contributor to OpenML platform. Extended the API in PyTorch, Tensorflow, and JAX, which allowed integration of multiple platforms in the API.
- **NEC Labs GmbH** Heidelberg, DE  
*Research Intern* Dec 2018 - July 2019
  - **NAS**: Analysis and benchmarking of multiple Neural architecture search systems with applications to computer vision, text analysis, reinforcement learning, and continual learning

## PUBLISHED PAPERS AND SOFTWARE

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1. **Towards Efficient AutoML**: A Pipeline Synthesis Approach Leveraging Pre-Trained Transformers for Multimodal Data, A.Moharil, **P.singh**, D.Tamburri, J.Vanschoren **Machine Learning Journal** ECML PKDD 2024
2. **NASTrans**: Efficient Supernet Transfer for Neural Architecture Search, **P.Singh**, J.Vanschoren(Under review 2024)
3. **AutoClust**: Applications of Optimal Transport Distances in Unsupervised AutoML, **P.Singh**, J.vanschoren (NeurIPS OTML 2023)
4. **LOTUS**: Method for automated unsupervised outlier detection, **P.Singh**, J.Vanschoren (IJCAI 2-23 and NeurIPS Meta-Learn workshop 2022)

5. **Online-AutoML**: Machine learning system for real-time streaming data. B.Celik, **P.Singh**, J.Vanschoren (Machine Learning Journal-22)
6. **Pyampute**: Library for data amputation. (**SciPy** 2021)
7. **EMProX**: Faster Performance Estimation for NAS with Embedding Proximity Score, (**ECML** 2022 Meta-Knowledge Transfer Workshop) G.Franken, **P.Singh**, J.Vanschoren
8. **AutoImbalance**: Automated Imbalanced Learning (Preprint) **P.singh**
9. **Masters thesis**: A study of the learning progress in neural architecture search techniques (arxiv)

## TEACHING

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- **ML Engineering Course**: Teaching assistant for 3 semesters of ML Engineering course at masters level
- **Supervision**: Supervised four master's thesis students, two BEPs, and two capita selecta students.

## VOLUNTEERING

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- **Developer Orgs**: PyData(Founder of Heidelberg and Tartu Chapters), PSF, MLCommons, Open Machine Learning Foundation, NumFocus
- **Social Orgs**: Make a Difference, Erasmus Student Network

## PROGRAMMING SKILLS

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- \* **Languages**:Python, R
- \* **ML Frameworks**:Tensorflow, PyTorch, JAX, Dask
- \* **Large scale compute**:GCP, AWS