PRABHANT SINGH

Google Scholar — Github
Researcher and Engineer

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Location: Amsterdam,NL

Experience

- **Eindhoven University of Technology** — Eindhoven, NL
  PhD student and Teacher — *September 2024 - Present*
  - **Research** : Working on applying Optimal transport for better training of Neural networks and meta learning, inspecting neural network training behaviour and automating design of neural networks. My research interest involves: Multimodal AI, Transfer Learning and Optimisation for neural networks design.
- **KrampHub** — Utrecht, NL
  Senior Data and ML Engineer — *September 2023 - August 2024*
  - **ML Platform:** : AI Developer for KAI, Kramp AI platform which provides access and machine learning capabilities organization-wide
- **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

Education

- **Eindhoven University of Technology** — Eindhoven, NL
  Ph.D. student, Research Area: Machine Learning, Anomaly detection, Clustering — *2023 - 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*

Programming Skills

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

Published Papers and software

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 2024
2. **NASTrans**: Robust and efficient supernet transfer for neural architecture search, **P.Singh**, J.Vanschoren(Preprint 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 and clustering, **P.Singh**, J.Vanschoren (IJCAI-23)
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 MetaLearn) G.Franken, **P.Singh**, J.Vanschoren
8. **AutoImbalance**: Automated Imbalanced Learning (Preprint) **P.singh**

Teaching

- **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

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