Prabhu Teja Sivaprasad

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https://scholar.google.com/citations?user=teCKzqcAAAAJ

EXPERIENCE

Applied Scientist   Apr 2023 – Present
AWS, Amazon Development Center Germany GmbH   *Berlin, Germany*

- Core contributor to Amazon Q Feature Development coding agent that ranked top on the SWE-bench leaderbird. Lead the design and training of trainable verifier networks, LLM coding agents with special tools. Contributed to internal tooling for large-scale experimentation with LLMs, and building evaluation pipelines.
- Core contributor to Renate, a PyTorch library for continual learning. Specialized in memory-free approaches for LLM based Continual Learning. Proposed and published a method for efficient continual learning for transformers with LoRA.
- Devised projects for and mentored interns working on training retrieval models. Published the outcomes at ACL 2025.

Applied Scientist Intern   Sept 2021 – Feb 2022
AWS, Amazon Development Center Germany GmbH   *Berlin, Germany*

- Methods for closed-form optimal learning rates for distributed training of large neural networks; specialized on Local SGD techniques. Investigated why traditional methods for Local SGD perform worse than that of SGD. Published results at TMLR 2024.

Research Assistant   Nov 2018 – Mar 2023
Idiap Research Institute   *Switzerland*

- Method for efficient segmentation transformers using disparate amounts of computation for different parts of the image based on their difficulty. Presented at BMVC2022.
- Method for adapting networks to domain shifts at inference time using augmentation robustness. Presented at NeurIPS 2021 Workshop on Distribution Shifts.
- Method for unsupervised domain adaptation for semantic segmentation. Specifically the case of source data-less domain adaptation using uncertainty quantification. Published CVPR 2021.
- Critical study of the practices of benchmarking of optimizers. Defined the notion of tunability. Large scale experimentation revealed that Adam optimizer is the most tunable of the considered list. Published at ICML 2020.
- Teaching Assistant (TA) for the course EE-559 on Deep Learning ($\sim$ 400 students) taught by Dr François Fleuret at EPFL for the spring semesters of 2020, 2021, 2022. My tasks were to hold tutorial sessions after each lecture, and to design and evaluate course projects.

Research Scientist   Apr 2017 – Oct 2018
Amazon Development Center India   *Bangalore, India*

- Built NLP models for auto-moderation of advertisements on Amazon site using word embeddings, sentence embeddings, cross-lingual transfer.
- Productionised models for scoring millions of ads with low latency constraints.

Research Engineer   Jul 2014 – Feb 2017
Siemens Healthineers   *Bangalore, India*

- Segmentation of human vertebra in Computed Tomography images: Active Shape models, Machine Learning (Random Forest) based boundary detection and Laplacian Mesh deformation.
- Deep neural networks for organ detection and segmentation in Computed Tomography images.

EDUCATION

Idiap Research Institute, École polytechnique fédérale de Lausanne (EPFL)   Switzerland
Doctor of Philosophy (PhD) in (Electrical Engineering)   *2023*

International Institute of Information Technology (IIIT-H)   Hyderabad, India
Master of Science (MS) (Electronics and Communication Engineering)   *2015*

PUBLICATIONS

- FJ Fehr, Prabhu Teja, L Franceschi, G Zappella **CoRet: Improved Retriever for Code Editing**, *Association of Computational Linguistics (ACL), 2025 Main Track* [PDF]

- Rashid MS, Bock C, Zhuang Y, Buccholz A, Esler E, Valentin S, Franceschi L, Wistuba M, Prabhu Teja, Kim WJ, Deoras A, Zappella G, Callot L **SWE-PolyBench: A multi-language benchmark for repository level evaluation of coding agents** *ArXiV, 2025*[PDF]

- Wistuba M, Prabhu Teja, Balles L, Zappella G **Choice of PEFT Technique in Continual Learning: Prompt Tuning is Not All You Need** *ArXiV, 2024*[PDF]

- *Balles L*, Prabhu Teja*, Archambeau C **On the Choice of Learning Rate for Local SGD** Transactions on Machine Learning Research, 2024[PDF]*

- *Wistuba M, Prabhu Teja, Balles L, Zappella G **Continual Learning with Low Rank Adaptation** NeurIPS 2023 Workshop on Distribution Shifts*[PDF]

- *Courdier E*, Prabhu Teja*, Fleuret F* **PAUMER: Patch Pausing Transformer for Semantic Segmentation** *33rd British Machine Vision Conference, 2022*[PDF].

- *Prabhu Teja, Fleuret, F* **Test time Adaptation through Perturbation Robustness** *NeurIPS 2021 Workshop on Distribution Shifts*. [PDF]

- *Prabhu Teja, Fleuret, F* **Uncertainty Reduction for Model Adaptation in Semantic Segmentation** *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2021.* Webpage at https://git.io/JthPp.

- *Prabhu Teja*, Mai, F.*, Vogels, T., Jaggi, M. and Fleuret, F* **Optimizer Benchmarking Needs to Account for Hyperparameter Tuning** *In Proceedings of the 37th International Conference on Machine Learning (ICML), 2020.* Webpage at https://git.io/JOqV9.

- *Prabhu Teja, Namboodiri, A* **A Ballistic Stroke Representation of Online Handwriting for Recognition.***International Conference on Document Analysis & Recognition–2013*[PDF].

PROGRAMMING SKILLS

Languages: Python, C++ (basic)
Frameworks: PyTorch ecosystem, Scientific Python ecosystem, LangChain, LaTeX, Eigen
Developer Tools: Git, VS Code, PyCharm

PROFESSIONAL ACTIVITIES

Reviewer for AAAI 2025, CVPR 2025, 2024, ICML 2023, 2024, NeurIPS 2022, ICLR 2024, 2022.