

Orchid Majumder

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WORK EXPERIENCE

AWS AI Labs

Seattle, USA

Principal Research Engineer, Amazon Bedrock

Sep 2023 – current

- Research engineering lead for Amazon Titan multi-modal vision-language models and text-to-image generation models (launched as part of Amazon Bedrock).

AWS Rekognition

Seattle, USA

Senior Research Engineer, Computer Vision Science

Apr 2019 – Sep 2023

- Research and Engineering lead for Amazon Rekognition Custom Labels, an AWS AutoML service aimed towards helping customers build their own ML models with a few labeled samples.
- Worked on research topics related to few-shot, continual and meta-learning algorithms for visual recognition.

AWS SageMaker

Seattle, USA

Research Engineer, AI Applications

Mar 2017 – Apr 2019

- Part of the core team that launched Amazon SageMaker at AWS re:Invent 2017, a fully managed AWS service for building, training and deploying any kind of ML models.
- Worked on research topics related to meta-learning based hyperparameter tuning for computer vision models and organized a tutorial session on hyperparameter tuning in Amazon's internal ML conference.
- Led the development effort for Inference Pipeline for Amazon SageMaker.
- Developed deep-learning based NLP algorithms including Seq2Seq and Object2Vec which are offered as built-in algorithms within Amazon SageMaker.

Amazon

Bangalore, India

Software Engineer, Amazon India

Jul 2014 – Mar 2017

- Engineering lead for registration and order management for individual sellers on Amazon India — led a large-scale cross-team effort to develop a software system that enabled individual sellers to get started as professional sellers.
- Built a rule-based recommendation engine to help sellers determine the price for their products, repurposed Amazon logistics stack for individual sellers and simplified the registration workflow for new individual sellers.

INTERNSHIP EXPERIENCE

Amazon

Bangalore, India

Software Engineer Intern, Amazon Retail

Jun 2013 – Jul 2013

- Built an intermediate caching layer using Amazon DynamoDB to reduce the latency caused by querying internal upstream services for duplicated requests.
- Built a distributed log parser using Hadoop/MapReduce. The system persisted daily logs into Amazon S3 and later processed those with Amazon EMR for analytical queries.

Indian Statistical Institute

Kolkata, India

Research Intern, Machine Perception

Jun 2012 – Aug 2012

- Worked on using fuzzy neural-network based algorithms for Indian dance style recognition from images.

PUBLICATIONS

Revisiting Contrastive Learning for Few-Shot Classification (arXiv) – Orchid Majumder, Avinash Ravichandran, Subhransu Maji, Marzia Polito, Rahul Bhotika, Stefano Soatto.

Incremental Meta-Learning via Indirect Discriminant Analysis (ECCV 2020) – Qing Liu, Orchid Majumder, Avinash Ravichandran, Rahul Bhotika, Stefano Soatto.

MARTHE: Scheduling the Learning Rate Via Online Hypergradients (IJCAI 2020) – Michele Donini, Luca Franceschi, Orchid Majumder, Massimiliano Pontil, Paolo Frasconi.

Learning the learning rate for gradient descent by gradient descent (ICML 2019 AutoML Workshop) – Orchid Majumder, Michele Donini, Pratik Chaudhari.

Estimating Informativeness of Samples with Smooth Unique Information (ICLR 2021) – Hrayr Harutyunyan, Alessandro Achille, Giovanni Paolini, Orchid Majumder, Avinash Ravichandran, Rahul Bhotika, Stefano Soatto.

d-SNE: Domain Adaptation Using Stochastic Neighborhood Embedding (CVPR 2019 Oral) – Xiang Xu, Xiong Zhou, Ragav Venkatesan, Gurumurthy Swaminathan, Orchid Majumder.

FineText: Text Classification via Attention-based Language Model Fine-Tuning (arXiv) – Yunzhe Tao, Saurabh Gupta, Satyapriya Krishna, Xiong Zhou, Orchid Majumder, Vineet Khare.

PEER REVIEWS

Conferences – NeurIPS (2021, 2022), ICLR (2022, 2023), CVPR (2022, 2023), ICML (2022, 2023), AutoML (2022), ECCV (2022), ICCV (2023).

Journals – TPAMI, TMLR, IEEE TCSVT.

Outstanding Reviewer Awards – ECCV (2022).

PATENTS

Automated Machine Learning Pipeline Exploration and Deployment (US : 2021/0097444 A1).

OPEN SOURCE

adatune | [GitHub](#)

- Implementation of IJCAI 2020 paper - “MARTHE: Scheduling the Learning Rate Via Online Hypergradients”.

sagemaker-sparkml-serving-container | [GitHub](#)

- A toolkit for deploying SparkML models efficiently in SageMaker without an Apache Spark runtime.

ACADEMICS

Columbia University in the City of New York

M.S. in Computer Science (Machine Learning Track)

New York, USA

2020 – 2022

Jadavpur University

B.E. in Computer Science and Engineering

Kolkata, India

2010 – 2014

OTHER ACHIEVEMENTS

Mathematics Olympiad – One of the 500 students all over India to qualify for the Indian National Mathematical Olympiad (INMO) in 2008.

Entrance Examinations – Ranked in the top 0.1% in the secondary examination, higher-secondary examination and engineering entrance examination in the state of West Bengal in India.