Abhijeet Parida

R&D DevOps Engineer
Childrens National Hospital
(H1B Visa Holder)

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Skills

- **Programming:**
  - Python ●●●●○
  - MATLAB ●●●○○
  - Bash ●●●○○
  - CUDA C ●●○○○
- **Frameworks:**
  - OpenCV ●●●●○
  - PyTorch ●●●●○
  - MonAI ●●●●○
  - NVFlare ●●○○○
- **Misc Tools:**
  - Git ●●●●○
  - Docker ●●●●○
  - AWS/GCP ●●●○○

Interests

- Self-Supervised Learning
- Unsupervised Learning
- Federated Learning
- Medical Image Harmonisation
- Anomaly Detection
- Few Shot Learning

Work Experience

Jun, 2022 – Now
R&D DevOps Engineer — **Childrens National**
Investigating deep learning methods for Image Harmonisation of MRI and building Federated AI Models for clinical outcomes

Nov, 2019 – Apr, 2022
Data Scientist — **deepc GmbH**
Working on Deep Learning-based algorithm design and development for Image-based Radiological data. Tasks include development of the orchestration of AI models and design of workflows for processing large amounts of radiological image data. Supervising external Master Thesis candidates on topics of deep learning for anomaly detection.

Jun, 2019 – Nov, 2019
Junior Data Scientist — **deepc GmbH**
Investigated deep learning methods for novelty or anomaly detection Computed Tomography(CT) and Magnetic Resonance(MR) scans for Brain Imaging.

Sep, 2018 – May, 2019
Advanced Bussiness Analytics Intern — **Allianz SE**
Investigated Semi-supervised semantic segmentation in deep learning for computer vision-based tasks for Motor Insurance claims applications. Tasks included background research in public data sets for the task of semantic segmentation and looking into the application to the Motor Insurance claim problem.

Jan, 2018 – Aug, 2018
Working Student — **UnternehmerTUM GmbH**
Investigated applications of Deep Learning in a BMW Project "Automated Assignment of Robotic Measurement Points in Automotive Assembly". The tasks consisted of creating a dataset for deep learning based segmentation task to assign Robotic Measurement Points.

Oct, 2017 – Dec, 2018
Research Assistant — **Center for Energy Markets, TUM**
Scrapped economic indicators data from various digital resources(websites, pdfs, CSV, etc). Tasks included data preparation and adhoc machine learning-based analysis on the data.

Education

Postgraduate Studies

2016 – 2019
M.Sc. in Computational Science and Engineering — **TUM, DE**
Thesis Title: Learn To Segment Organs with a Few Bounding Boxes
Supervisors: Dr. Shadi Albarqouni, Arianne Tran, Prof. Dr. Nassir Navab [CAMP]
German GPA: 2.0, **Eq. US GPA:** 3.3, **Eq. CGPA:** 8.5/10
Passed with Merit
Deep Learning | Machine Learning | Semantic Segmentation | Meta Learning | Medical Imaging | 2D Computer Vision

Undergraduate Study

2012 – 2016
B.Tech. in Mechanical Engineering — **Amrita University, IN**
Thesis Title: Direct Numerical Simulation of Shock-Induced Drop Breakup in Air
Supervisors: Jakob W. J. Kaiser, Dr.-Ing. Stefan Adami [AER]
CGPA: 8.54/10, **Eq. German GPA:** 1.7, **Eq. US GPA:** 3.7
First Class with Distinction (Bachelor Thesis at TUM)
Hypersonic Flows | Gas Dynamics | CFD

Publications

1. Anwar, S. M., **Parida, A.**, Atito, S., Awais, M., Nino, G., Kitler, J., & Linguraru, M. G. (2022). **SS-CXR: Multitask Representation Learning using Self Supervised Pre-training from Chest X-Rays**. arXiv preprint arXiv:2211.12944.

2. Sankar, A., Keicher, M., Eisawy, R., **Parida, A.**, Pfister, F., Kim, S. T., & Navab, N. (2021). **GLOWin: A Flow-based Invertible Generative Framework for Learning Disentangled**

Feature Representations in Medical Images. arXiv preprint arXiv:2103.10868.

3. **Parida, A.**, Sankar, A., Eisawy, R., Finck, T., Wiestler, B., Pfister, F., & Moosbauer, J. (2020). **Train, Learn, Expand, Repeat.** .#22. **AI4H Workshop, ICLR 2020**

4. **Parida, A.**, Tran, A., Navab, N., & Albarqouni, S. (2019). **Learn to Segment Organs with a Few Bounding Boxes**. arXiv preprint, arXiv:1909.07809.

Peer Reviewing

Nov, 2022	SPIE, **Journal of Medical Imaging** Jan 2023 Issue	Reviewer
Oct, 2022	Workshop on **Machine Learning and the Physical Sciences**, NeurIPS 2022	Reviewer
Oct, 2022	Workshop on **Synthetic Data 4 Machine Learning**, NeurIPS 2022	Program Committee

Kaggle Competitions

2023	SPR X-Ray Gender Prediction Challenge	8/476
2023	SPR X-Ray Age Prediction Challenge	16/430
2022	RSNA 2022 Cervical Spine Fracture Detection	849/12879

Open Source Contributions

Owner	Python Packages- pdf2dcm, nekton
	Docker Container- Brain Segmentation brainseg
	Python SDK for HOTBIT
Contributor	Python Packages- MonAi, OpenOdia, Microsoft CNTK
	Julia lang library- QuanEcon.jl
	Awesome Lists- Awesome Meta Learning

Academic Projects

Oct, 2017 – Jan, 2018	**Physics Aware Generative Adversarial Networks** Implemented Tensorflow based GAN for efficient and fast Smoke Simulation on high-resolution grids from low-resolution 2D simulations.
Oct, 2017 – Jan, 2018	**Modeling Rumor Propagation** Python based parametric study of modelling of Rumor propagation in a society.
May, 2017 – Sept, 2017	**Total Variational Blind Deconvolution on CUDA** Re-implemented MATLAB code of Blind Deconvolution of an image on CUDA C. CUDA speedup of 5x v/s C/C++ implementation of the algorithm.
Apr, 2017 – Jun, 2017	**Statistical Modeling of Bundesliga Football Matches** Predicted individual game outcomes based on the team performance of past 5 seasons using R. Judged best student project for SS2017 with a model accuracy of 40.2 %.
Apr, 2017 – Jun, 2017	**Flood Forecast on the Isar River** Estimated the distribution of the river water data and Predicted the chances of a flood in the river Isar using Monte Carlo Simulations.

Languages

English (TOEFL iBT:107/120, 2016)

Deutsch (A2, 2019)

Odia (Mother Tongue)

Short Bio

During the day, I am involved in building products that will allow radiologists to seamlessly use deep learning based unsupervised anomaly detection algorithms Brain Imaging.
Personality-wise I am INTP-T type therefore I bring with me a unique perspectives and vigorous intellect.
In my free-time, enjoy reading non-fiction, eating good food and I have interest in all non-living things flying.
I am interested in cycling and recently, have started training to be Glider Pilot and have around 5 hours in flight time over 30 take-offs.

Presentations

2022 **Introduction to Medical Imaging** Online
Gave a lecture and hands-on session basics of Medical Imaging for AI at the Odisha.ml Faculty Development Program.

2022 **Introduction to Computer Vision** Online
Gave a lecture and hands-on session basics of computer vision at the Odisha.ml Summer School 2022 for Engineering Students.

2019 **Tutorials in TensorFlow and Sonnet** Ben Guerir, MA
Assistant tutor for labs at North African Machine Learning Summer School (NASSMA 2019).

2019 **Intro to NumPy for Engineers** Bengaluru, IN
Gave a lecture and hands on tutorial session on getting started with NumPy for Numerical Methods.

2018 **Poster: Knowledge Transfer on Stackoverflow** Munich, DE
Presented the idea of modelling interaction on Stack Overflow as an indicator of technical migration pattern for the Seminar on Computational Social Science.

2018 **Poster: Facial Expression Prediction** Garching, DE
Presented Teacher Network based Deep Learning technique for efficient Facial Expression Detection for the course Intro to DL4CV.

2015 **Poster: Biomass Fuel Brickets** Bengaluru, IN
Presented an technique to produce large scale biomass fuel brickets at the Indo-Dutch International Conference for Sustainable Development at IISc, Bengaluru.

Awards and Prizes

2019 Winner, Crack Detection Challenge, HackaTUM Garching, DE
2018 2. Winner, Texas Instruments Smart City Hackathon Freising, DE
2014 2. Winner, All Terrain RC Car Race, Pravega Bengaluru, IN
2014 Winner(Design), All Terrain RC Car Race, Pravega Bengaluru, IN
2013 3. Winner, Autonomous Grid Solving Robot, graVITas Vellore, IN