Abinav Ravi Venkatakrishnan

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Technical Skills

- **Programming Languages** - Python(Advanced), Rust(Intermediate), C(Intermediate), bash(Intermediate), Javascript(basic),Julia
- **Data Science tools** -Numpy, Scipy, matplotlib, seaborn, scikit learn, scikit image, Pytorch, Pandas, OpenCV, Flask, PySyft, Plotly Dash, PySpark
- **Database** PostrgreSQL, MongoDB, DynamoDB
- **DevOps Tool** Docker, Kubernetes, Knative, Gitlab runner, Jenkins, Terraform.
- **Cloud Platforms** - AWS (S3 and EC2, ECR, API Gateway, Lambda, DynamoDB, IAM)

Experience

- **Machine Learning Engineer** Machine Learning Reply gmbh — Jun 2022 - Present
  1. For an internal data marketplace building an Orchestrator service consisting of approval workflows, Input validation etc and migrated from monolithic to Microservice architecture making the platform scalable
     Tools Used - AWS lambda, API gateway, IAM, FastAPI, Terraform.
  2. Member of MLops internal Community Of Practice
- **Machine Learning Engineer** deepc gmbh — Oct 2020 - Mar 2022
  1. Increasing the number of valid requests to vendor algorithms by developing deep learning-based image routing microservice from 46% to 100%
  2. Creating benchmarking workflows for pre-assessment of vendor deep learning algorithms by measuring against different datasets and validating claims for prioritising the integration process.
  3. Developed a User-friendly benchmarking dashboard with user interface by developing structured dataset creation API using Plotly dash and Pandas.
- **Junior Machine Learning Engineer** deepc gmbh — June 2019-Oct 2020
  1. Technical evaluation of new use cases measured by shortest time to production was done by evaluating data sources, and creating new machine learning/ deep learning models for anomaly detection.
  2. Ensured that the quality of inference models at the test site remained at 0.95 sensitivity and specificity by regular inference process and retraining if needed.
  3. Developed unsupervised deep learning methods for anomaly detection in brain CT scans measured by dice score of segmentation outputs(0.8).
- **Working Student Data Science,** The Mobility House Gmbh — Oct 2018 - Mar 2019
  1. Conducted Data Analysis to understand charging behaviour of vehicles for vehicle-to-grid projects (Time series Data)
  2. Conducted Data analysis for pooling concept for frequency containment reserve.
  3. Attempted Pattern recognition and forecasting of Energy market data for trading strategies.
- **Associate Software Engineer,** Robert Bosch Engineering and Business Solutions, Coimbatore — September, 2016 - September 2017

Education

- **M.Sc, Computational Science and Engineering** Department of Informatics, Technical University Munich — 2017 - 2020
- **B.Tech, Mechanical Engineering** Amrita School Of Engineering,Bengaluru, India (First Class with Distinction) — 2012 - 2016

Open Source

- **Writing team lead** OpenMined Writing Responsible for maintaining the blog, Content editing, induction of new members into the team, facilitation of content production for privacy-enhancing technology July 2021 - Present

Publications

- **Abinav Ravi Venkatakrishnan**, Seong Tae Kim, Rami Eisawy, Franz Pfister, Nassir Navab, "Self supervised Out of distribution detection in Brain CT scans", **Med Neurips 2020**, view here
- Suprosanna.S,**Abinav Ravi Venkatakrishnan**,Ivan Ezhov, Jana Lipkova,Marie Piraud,Bjoern Menze ,"Implicit Neural Solver for Time-dependent Linear PDEs with Convergence Guarantee", **NeurIPS workshop on Machine learning with convergence Guarantees**,view here
- **Abinav R** ,Nandu .R.Nair,P.Shravan,Pradeesh Kumar and S.R.Nagaraja ,"CFD Analysis of Co-Flow Jet Airfoil", Indian Journal of Science and technology, vol.9 Issue.45 view here
- **Abinav R**, Nambiar G.K, Sahu D, "A case study on low power vapour compression refrigeration system", IOP Conference Series,Material science and Engineering, vol 149, July 2015. view here

Paper Review

- Reviewer for Distributed and Private Machine learning workshop at ICLR 2021 Mar 2021
- Reviewer for Secure and Privacy preserving machine learning for medical imaging workshop and tutorial at MICCAI 2021 July 2021