

Abinav Ravi Venkatakrishnan

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EDUCATION

1. **M.Sc in Computational Science and Engineering** [Department of Informatics, Technical University Munich](#) CGPA - **¹ 2017-2020(expected)
2. **B.Tech in Mechanical Engineering** [Amrita School Of Engineering,Bengaluru, India](#) CGPA - **/10 (First Class with Distinction)² 2012 - 2016

EXPERIENCE

- **Junior Data Scientist- Working Student, [deepc](#)** June 2019-Present
 1. Support in deployment of product in Klinikum rechts der Isar
 2. Technological evaluation of new use cases by conducting literature review, survey of dataset and creating baseline models
 3. Support in database management.
- **Working Student Data Science, [The Mobility House Gmbh](#)** Oct 2018 - Mar 2019
 1. Conducted Data Analysis of Charging Behaviour for vehicle to grid projects (Time series Data).
 2. Conducted Data analysis for pooling concept for frequency containment reserve.
 3. Pattern recognition and forecasting of Energy market data for trading strategies.
- **Associate Software Engineer - Design , [Robert Bosch Engineering and Business Solutions, Coimbatore](#)** September, 2016 - September 2017
 1. Design of Small wiper motor from Benchmarking data.
 2. Design of closure mechanism for Bottom guard in Circular saw power tool

TECHNICAL SKILLS

Programming Languages - Python, C, C++(Basic),Julia ,Javascript(basic)
Tools and Libraries - OpenMP, MPI, Pytorch, Pandas, Numpy,Scikit-Learn, Pika, OpenCV,Scikit-image, Nibabel, Flask
Cloud Platforms - AWS, Google Cloud

PUBLICATIONS

- 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](#)

RELEVANT COURSES

- **Courses** : Machine Learning, Introduction to Deep learning, Advanced deep learning for physics, Image processing for physics, Visual Data Analytics, Scientific Computing, Data Innovation lab, Computer vision- Object tracking and detection.

PROJECTS

- **How to train small and reliable Cancer detectors?** Objective is to use Out of Distribution detection for reliable detection and distillation to compress models for deployment in resource constraint environments Dec2019 - Feb2020
- **Self Supervised OOD-Detection for medical applications (Master thesis)** Using self-supervision for classifying a sample as in or out of distribution uses a supervoxel classification for localization of anomaly in clinical CT brain scans Sept 2019 - Present
- **Inverse Problems in PDE driven process using Deep learning** A guided research project on using data driven discovery techniques for finding underlying Partial Differential Equations.Convergence Guarantees of the considered method are also studied Apr2019-Oct2019

¹Max 1.0 Min 4.0

²Max 10.0 Min 5.0

- **Stroke Detection** Built a deep learning model for stroke detection on BRATS dataset using a Fully Convolutional encoder and fully transpose convolution decoder for segmentation of stroke. May 2019
- **A Network Analytical take on European parliament:** Built topic model from European parliament speeches and then built a network model and did community detection on the network model to find Hidden agenda. Oct 2018-Feb 2019
- **Physics Aware Generative Adversarial Network:** Application of Generative Adversarial Network on Velocity simulation of a smoke flow. The goal was to extend the simulation on higher resolution while training on a lower resolution Apr-July 2018
- **Autoencoder for velocity Images:** Built an autoencoder for velocity image feature extraction. The velocity Images are generated from MantaFlow. June-July 2018
- **CFD Analysis of Co-Flow Jet Airfoil :**Applying a novel control flow technique to improve the Lift and stall margins. Structural optimization of the slots used for control flow technique was also done. TOOLS USED: CATIA V5, ANSYS Fluent, Python.

ACHIEVEMENTS AND AWARDS

- Won first place in HackaTUM hackathon 2019
- Published extended Abstract in Machine learning with Guarantees workshop at NeurIPS conference 2019.
- Selected for NASSMA summer school in Ben Guerir, Morocco, 2019 with complete scholarship.
- Selected for prestigious *Amrita TBI TIDE Innovation award and seed grant* in 2015
- Won the Bright Idea Award for Fabrication of solar refrigerator
- Graduated Bachelors in Technology in Mechanical Engineering with First Class and distinction . Awarded to people with CGPA more than 8/10 and a publication in international Conference or Journal