

Abinav Ravi Venkatakrishnan

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EDUCATION

1. **M.Sc in Computational Science and Engineering** [Department of Informatics, Technical University Munich](#) 2017-2020(expected)
 - CGPA - **¹
2. **B.Tech in Mechanical Engineering** [Amrita School Of Engineering,Bengaluru, India](#) 2012 - 2016
 - CGPA of **/10 (First Class with Distinction)²
3. **High School** - S.D.A.V Higher Secondary School,Chennai (HSC) - **% 2010 - 2012
4. **Secondary School** - D.A.V School,Chennai,(CBSE) - ** 2000 - 2010

EXPERIENCE

- **Junior Data Scientist- Working Student, [deepc](#)** June 2019-Present
Deep learning Model creation for MRI and CT imaging for Anomaly detection and support for the MRI and CT pipeline to be deployed in Klinikum rechts der Isar in Munich.
- **Working Student Data Science, [The Mobility House Gmbh](#)** Oct 2018 - Mar 2019
Responsible for running Data Analysis on Time Series data for the Product management team for checking viability of Concepts. Involved in Time Series Forecasting analysis project for Energy market data.
- **Associate Software Engineer - Design , [Robert Bosch Engineering and Business Solutions, Coimbatore](#)** September, 2016 - September 2017
Responsible for creation of 3D CAD Models and Drawings. Worked for Electric Drives division where I had undertake redesign of a new small wiper motor from existing designs and benchmarking data.Also worked in supporting Power tools by helping in creation of Mechanism for closure of bottom guard in Circular saw.

TECHNICAL SKILLS

Programming Languages - Python, C, C++(Basic), Java(Basic),Javascript(basic)
Tools and Libraries - OpenMP, MPI, Pytorch, Pandas, Numpy,Scikit-Learn, nodejs.
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, Seminar- recent trends on 3d vision and deep learning, Scientific Computing, Data Innovation lab, Computer vision-Object tracking and detection,Cloud computing.

¹Max 1.0 Min 4.0

²Max 10.0 Min 5.0

PROJECTS

- **OOD-Detection for medical applications (Master thesis)** Objective is to build an Unsupervised Out of Distribution detector for Anomaly detection of Clinical Images. 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 Apr 2019-Oct 2019
- **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.
- **Case study of Low power Vapour compression Refrigeration-** -A numerical simulation of various components of the refrigerator to obtain the temperatures of the refrigerator and to obtain the Coefficient of performance of the refrigerator for the experimental conditions obtained from the Vapor Compression Testing apparatus in the Refrigeration lab. TOOLS USED: ANSYS Fluent, CATIA V5.

ACHIEVEMENTS AND AWARDS

- Published 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