

Akshith Acharya

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EDUCATION

Birla Institute of Technology and Science

M.Sc. in Mathematics

Pilani, India

Aug 2016 – Jul 2020

- Ranked best private university in India; Awarded highest possible grade in Master Thesis

General Electric

Edison Engineering Development Program

Bangalore, India

Oct 2020 – Sept 2022

- Highly selective program that accelerates participants' professional and technical development within GE's Advance Courses and a variety of business-critical engineering assignments.

SKILLS

Programming: C, C++, Java, Python, JavaScript, R, SQL, Git, Docker

Libraries: Scikit-Learn, PyTorch, Keras, TensorFlow

Languages: Hindi (Native), English (Professional), Sanskrit (Novice)

WORK EXPERIENCE

GE Research

Edison Engineer, Research Engineer

Bangalore, India

Apr 2021 – Present

- Developed a combined annotation independent token classification and entity linking approach on patient reports by leveraging structures of medical ontologies like SNOMED and UMLS.
- Finetuning and Reinforcement learning of a GPT based generative text model on customer-engineer interactions to provide automatic solutions to customer queries.
- Developed an automatic Clinical Trial Matching tool including techniques to convert unstructured Inclusion-Exclusion Criteria into structured numerical, ordinal and nominal fields leveraging named entity recognition, entity linking and Regex based approaches.
- Developed a web-based MRI viewer with a brain MRI segmentation model that achieved a test F-score of 0.84 using real-world training data.
- Timeline-based summarization of patient reports for Oncology using transformer based pipelines.
- Developed a cross-silo federated learning framework for token classification on real-world patient data with multiple collaborators.
- Developed an end-to-end Micro-grid Energy Management System, deployed at multiple production sites.

GE Healthcare

Edison Engineer

Bangalore, India

Oct 2020 – Mar 2021

- Developed and Integrated a Voice to Action converter into a web based diagnostic viewer for radiologists.

GE Healthcare

Intern

Bangalore, India

Summer 2018, 2019

- Developed a multi-threading approach in C for asynchronous logging to improve the performance of MRI Scanners.
- Designed and developed a cloud based application to handle real-time multi-modal data and real-time alert systems including various algorithms like Triple Low and Anesthetic agent check to determine the mortality rate of a patient.

RESEARCH EXPERIENCE

Technical University of Munich

Master Thesis

Munich, Germany

Aug 2019 – Dec 2019

- Development of [mirtargetbenchmark](#): A machine learning tool to benchmark miRNA target prediction tools.
- Applied multiple data preprocessing techniques on noisy expression data.
- Applied multiple regularization techniques like Ridge and Lasso regression to avoid overfitting of the linear models.
- Approaches used the number of binding sites and confidence scores of sequence based target prediction tools as predictions for benchmarking against ground truth correlation between gene and miRNA expression.

Google Summer of Code

Student Developer

Remote

Jun 2020 – Oct 2020

- Development of [rminizinc](#): An interface to [MiniZinc](#) in R as a part of [GSoC](#) 2020.
- Directly worked with the creators of MiniZinc to understand the the language better and designed the framework accordingly.
- Worked on advanced R programming to create custom classes for corresponding structures and classes in MiniZinc.
- Integrated existing MiniZinc solver classes by Rcpp to allow solving problems with multiple solver backends like GeCode, Chuffed, etc.

Machine Vision lab, CSIR-CEERI

Researcher

Pilani, India

Jan 2019 – May 2019, Part-time

- Developed a deep learning model for classification of breathing patterns in multiple patients to avoid the harm to healthy cells because of X-rays.
- Collected volunteer respiration data using kinect RGB-D camera.
- Applied noise reduction and augmentation for data pre-processing.
- VGG-16 based classification model utilizing pretrained imagenet weights resulted in a test accuracy of 86.5%.

PUBLICATIONS/PRE-PRINTS/PATENTS

- Pandey, Ram Krishna, and Akshit Acharya. "CoreDeep: Improving Crack Detection Algorithms Using Width Stochasticity." arXiv preprint arXiv:2209.04648 (2022). (Modified version accepted at [CVIP](#))
- Pandey, Ram Krishna, and Akshit Acharya. "TrueDeep: A systematic approach of crack detection with less data." arXiv preprint arXiv:2305.19088 (2023). (Submitted to [Expert Systems with Applications](#))
- Acharya, Akshit, and Ram Krishna Pandey. "Revealing the Underlying Patterns: Investigating Dataset Similarity, Performance, and Generalization." arXiv preprint arXiv:2308.03580 (2023). (Submitted to [Neurocomputing](#))
- Sasidharan, Sanand, Acharya, Acharya, Kanamarlapudi, Anuradha, Goravar, Shivappa and Bhoi, Kshireswar. "AI-Assisted EMR Workflows." US Patent (To be filed). (2023)
- Acharya, Acharya, Goravar, Shivappa, Sasidharan, Sanand and Kanamarlapudi, Anuradha. "Clinical Context Centric Natural Language Processing Solutions." US Patent 90274628 (Application filed). (2023)
- Goravar, Shivappa, Acharya, Acharya, Sasidharan, Sanand and Kanamarlapudi, Anuradha. "Methods and Systems for Summarizing Densely Annotated Medical Reports." US Patent 90269124 (Application filed). (2022)

OTHER ACTIVITIES

- Won the 1st Place Award in the Apogee Innovation Challenge at Bits Pilani that resulted in a summer internship at GE Healthcare.
- Served as a Joint Secretary for the Mathematics Association at BITS Pilani conducting various contests with 200+ participants.
- Won 3rd Place in the football tournament comprising of 20 teams at GE, Bangalore, India.
- Won the One Dream Corporate Cricket Cup which is an open tournament in Bangalore, India comprising of 20 teams.